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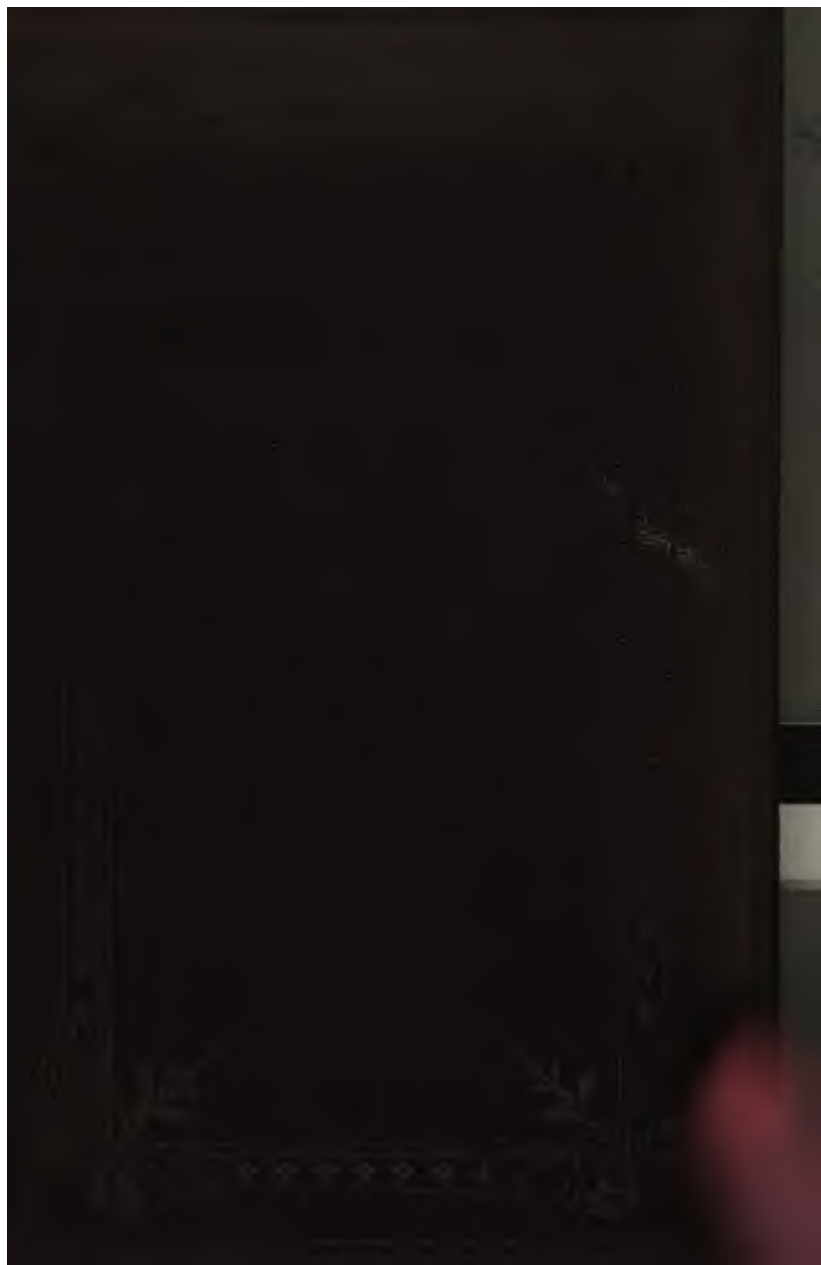
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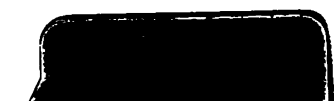
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DISEASE IN CHILDHOOD,

ITS COMMON CAUSES, AND DIRECTIONS FOR ITS

PRACTICAL MANAGEMENT.

BY

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TO THE HAN- TOWN INDUSTRIAL SCHOOL, &c



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TO
THE REV. SIR H. R. DUKINFELD, BART.
CHAIRMAN OF THE COMMITTEE OF THE
HOSPITAL FOR SICK CHILDREN,

IN ADMIRATION OF
HIS LONG-CONTINUED AND SUCCESSFUL LABOURS
IN THE CAUSE OF
NEGLECTED AND SUFFERING HUMANITY,

THIS BOOK IS DEDICATED,

BY HIS
OBLIGED FRIEND,

THE AUTHOR.



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INTRODUCTION.

THE intention of the present work may be expressed in a few words. It is designed to direct attention to the existence of a vast amount of mortality among children and the young, to develop some of its more common causes, and to afford such instructions as may serve to its diminution by leading to a right system of their management in health and disease.

The whole aspect of childhood has always presented itself to the writer as one of peculiar medical interest, and he has enjoyed extensive opportunities of observing it in sickness and in time of health. It may be hoped that the following pages will give evidence that these observations have not been uselessly made. Yet more earnestly he would venture to hope, that the fearful fatality which occurs at this period of life, and which he has in this work sought to illustrate, may now at length attract attention, and receive some effectual check.

63 Sloane Street, June 1852.



CHAPTER I.

INTRODUCTORY REMARKS.

NEARLY half a million of children who had not completed the first year of their existence, died in England in the six years 1839-1844. The exact number of deaths among male and female children in this period is four hundred and sixty-four thousand one hundred and ninety-five. Of this number rather more than the half were male children, and rather less than that sum were female, or respectively—

Of male children under one year - 260,382

Of female children „ „ - 203,813

Out of this number upwards of eighty-three thousand male children, and more than sixty-thousand female children, or together not fewer than one hundred and forty-three thousand did not live more than thirty days. That is to say, that upwards of one

fourth of the total deaths among children not a year old, occurred during the first month. In six years the Bills of Mortality make us acquainted with the fact, that nearly one hundred and fifty thousand infants perish whose little lifetime does not reach beyond thirty days!

In order to give these facts their due prominence, it may be advisable to supply a means of comparison between the mortality of children and that taking place among adults, on a more limited yet very important scale. By reference to the summary of the London Returns of Mortality for 1851, the same enormous loss of life in the early ages of the population appears. The observations from which the facts about to be mentioned are derived are made over an area of about one hundred and twenty-one square miles, upon which is found a population of more than two-and-a-quarter millions (2,373,799 by the Census of 1851), in a condition considered to represent the greatest intellectual and social advancement. In this district the total number of deaths in 1851 amounted to 55,353. Of these the deaths among males were 28,095, and among females 27,258. The births in the same period—one year—were 77,871; of this number the male children were 39,887, and the female 37,984. From a comparison

of these sums it appears that in the year 1851 there was an excess of births over deaths to the amount of 22,518. This sum will consequently exhibit the fact to some extent, that an annual addition is made to the population of the metropolitan districts of upwards of twenty thousand human beings. But it is of value, it is to be remembered, only so far as representing the loss of numbers by death, and its over-reparation by additions of new lives—the fluctuations of the population of a district being influenced by other causes than those of mortality or of reproduction.

The annual loss of more than fifty-five thousand individuals in a single district, although not exhibiting a high rate of mortality on the average, is such as to deserve the most attentive consideration as to its causes, and to the means, if any exist, of their diminution or prevention. But an analysis of the ages which contribute to this sum of mortality, presents us with one circumstance which scarcely would appear to have received the careful attention which it deserves. It is a well-ascertained fact, that nearly one-half of the annual loss of life in the metropolis takes place under the age of fifteen years! Upwards of twenty-five thousand seven hundred children die in London every year, the oldest not having seen

sixteen summers. The following returns give this fact in its exact characters :—*

1851.			
Deaths at the age of	0 to 15	- -	25,712
	15 to 60	- -	17,999
	60 and upwards		11,353

In the year 1849 upwards of thirty thousand children died in London, the deaths of adults being over thirty-seven thousand. The figures just given are strictly comparable, being the result of a most careful and well-organized system of registration. Of their general accuracy there cannot consequently exist a doubt; and they are periodically presented in an aspect of much significance to the notice of every medical man.

It has appeared to me desirable to state these preliminary facts, in order to direct attention to the importance of the general subjects on which this book is intended to treat. It is impossible to place such circumstances before any reflective mind without exciting the strongest interest, and producing an inquiry into the means adopted to control or to stay that vast stream of mortality which has been shown to sweep into the grave from the habitations of the great metropolis alone, twenty-five thousand human

* Summary of London Mortality. Registrar-General.

beings, as they are entering on the very threshold of life. The loss of a single little child to the community of which it formed one, is an event regarded as but of minor importance in comparison with that of an adult; and this is a natural result of that disposition of the mind which leads us to regard the present rather than the future, and also of the comparatively narrow social circle in which the presence of this little being was felt to be precious. Occasionally, the peculiar position of the child—the grandeur and importance of its future prospects—surrounds its death with a degree of interest, which fails to be applied to that of thousands of humbler hopes, and at such times the mortality which is making constant progress among young persons of all classes becomes elevated into its due importance. As an instance, it deserves to be mentioned, that the death of Napoleon's nephew, the Crown Prince of Holland, during an epidemic of croup, gave occasion to the offer of a prize by the Emperor for the best essay on this disease, to which circumstance we are indebted for many most valuable works on croup. But a lamentable degree of indifference has been felt in this country on the whole subject. Among the poorer classes every medical man whose duties have taken him much among them will give his testimony to the

existence of this state of apathy, and I have painful reason to add my own. To many, the occasional removal of several children from a family has borne the character rather of a positive relief or blessing than as a calamity against which they could make any attempt to provide. It is to be regretted that very constantly among the upper classes the mortality of the children of the poor presents itself in much the same general aspect. To the dreadful results of parental and social indifference in particular districts, it will be necessary again to call attention. Yet it may be here stated as a general fact, that an appalling amount of disease, entailing upon its tender victims the deepest physical suffering, forms an inseparable element in that mortality which we are too prone to regard in the mass as a relief from over-population, and in individual instances as the removal of a parental burden. To regard this mortality with indifference is, consequently, to look with a cold and unsympathising eye upon the ravages of disease and suffering on that which is the very type of debility and delicateness, the body of a little child. And it may be again repeated, nearly half the annual victims of disease and death belong to this class.

It is not to be denied that a large portion of the



mortality in question will always continue to prevail, notwithstanding that the most vigorous efforts may be made in future to arrest its progress: so long as there exist enfeebled and debilitated parents, and so long as those often mysterious diseases, which find their principal victims in the periods of infancy and childhood, retain their force, so long will infant mortality reach a high standard. But it is equally certain that an enormous loss of life among children is produced by causes which are known, and in a certain degree under control. Such causes, it may be supposed, only require to be brought into public view in order to their removal. But a painful experience has shown that they excite only a temporary attention, and after a time continue in as active operation as before. This remark applies not merely to the condition of the public mind, but, though in a less degree, to that also of the medical world; and the fact is perfectly notorious, that the diseases and mortality of infants and young persons generally, although occasionally exciting the attention of individuals who have made this subject their especial study, are too frequently considered as of comparatively trifling importance. Yet children contribute very nearly the numerical half of the cases of disease presented to the notice of most medical men, and to

no class is the fact of their excessive mortality better known.

It is an indication of the origin of a different feeling, that very recently a hospital for sick children has been instituted in the metropolis, and is now open for the reception of children from 2 years old to 10. Yet the appeal of the committee of this institution contains in it such evidence as fully supports what has just been stated. It is there stated in illustration of the extremely deficient amount of medical provision for the diseases of children:—

“There exists in London only one dispensary for the special treatment of the diseases of children; and neither in this city nor throughout the whole British empire is there any hospital exclusively devoted to their reception. At the same time, the number of children received into the general hospitals is so small, that on an enumeration of the population of those institutions, made in January 1843 by a Committee of the Statistical Society, they were found to contain only 136 children under 10 years of age. Of this small number, too, 41 had been admitted in consequence of accidental injury, 69 for the surgical treatment of some local ailment, and only 26, or less than 1 per cent., for the cure of any *internal disease*. It may be added, for the sake of

comparison, that while 23 of the last-mentioned 26 were children between the ages of 3 and 10 years, the total mortality between these ages, in 1842, amounted in the metropolis to 6,581.

“ This want, to which it is now sought to call the attention of the public, is one that has been felt and supplied in many other countries and cities of Europe. Not only do dispensaries for sick children exist in a great number even of the smaller towns on the Continent, but there are also hospitals set apart for their exclusive reception in Paris, Brussels, Frankfort, Munich, Hamburgh, Berlin, St. Petersburg, Moscow, Vienna, Prague, Pesth, Turin, Copenhagen, Stuttgard, Grätz, Brünn, Lemberg, and even in Constantinople.”

The intention of the present work is to place before the reader such facts as are of a reliable kind on the mortality among children, and its causes, and to direct attention to a right system of their prevention or moderating their intensity, by the medical and domestic management of these tender beings in health, and during the progress of the most common and frequently fatal diseases to which they are exposed. It may be hoped that some beneficial results will always arise from directing attention to the existence of great public evils ; and in such a

light must we regard that loss of life which now occurs in the early years of our population. It is a great natural law that careful investigation will never prove wholly barren of results; and in view of the present fatality of disease among children and young persons, it is a cause of hope that the careful attention of many able and experienced observers which it is beginning to attract, will at no distant time bring about an amelioration in this as in other instances of a somewhat similar character. It is the desire of the writer of this book to assist in this object; and in giving the results of his own inquiries and experience, to remember that in this direction he is only a labourer in common with many others of his medical brethren.

CHAPTER II.

ACTUAL MORTALITY AMONG YOUNG PERSONS UNDER 15.

THE facts stated in the preceding chapter will serve to give a general idea as to the existence of a great amount of undiminishing mortality among young persons. Medical science has greatly advanced; but the lessened fatality of the diseases of the adult has not been attended with an equal diminution in those of the infant or young child. It has been stated by some writers, that the mortality of the British population has undergone, in the course of half a century, an improvement to the enormous amount of 38 per cent. No statement could be more fallacious; and the argument based upon it, that this is due to an improved acquaintance with the infantile diseases, and their treatment, is wholly unsupportable. It may be questioned whether, in the diseases of children, there exists a greater difference than one

12 INFANTILE MORTALITY SCARCELY LESSENED.

or two per cent, in the rate of their present mortality, as contrasted with the same at the commencement of the present century. And it must be remembered, that the discovery of the protective influence of the vaccine virus has had, as it has become more extensively adopted, a most powerful effect in the reduction of infantile mortality, even in the rate already mentioned. Much also of the improvement is to be attributed, not so much to the advancement of medical science, as to an ameliorated social condition, to the diffusion of knowledge among the lower classes, and to their consequent moral and physical elevation. The science of medicine stands in no need of unmerited awards of triumph. What it has accomplished in bettering the physical condition of our people, and in its more direct application to the treatment of disease in the adult, places it beyond all requirements of artificial support. It has, therefore, yet to be shown, that a large reduction of general mortality has been effected among children, as a direct consequence of improved medical knowledge. At present, a painfully abundant collection of facts can be adduced, which indicate no such desirable results. I consider it important to establish this fact, as its existence necessarily forms a most important element *in the right* consideration of our subject. Whatever

may have been the rate of mortality, prior to the commencement of the present century, it is of great moment to inquire whether during the interval that has elapsed from that period, up to the present time, the fatality of infantile diseases has been lessened by any cause whatsoever. Since, during the half-century alluded to, many important discoveries have been made, and brought into practical application in contending with diseases, and since, in the same interval, the social condition of the masses has undergone a certain degree of amelioration, it might be reasonably hoped, that the loss of infant life had been stayed in a degree. It has already been stated, that such appears to have been actually the result. But let the amount be duly estimated,—it is a diminution of only 2 per cent. in the mortality of early life. Such is the result of the progress of our art in fifty years, and such also that of the assumed bettered condition of our population. This, alas! leaves little cause of gratulation either to the philanthropist or to the physician.

Since it is the intention of the present chapter to exhibit a correct view, by statistical facts alone, of the actual mortality taking place in children, and young persons generally, it is unnecessary to seek to establish the position assumed—that a fearful loss of life in children is annually taking place—by any reference

to authorities. The following observations of Dr. Webster, being derived from a careful analysis of facts presented by the Reports of the Registrar-General, are, however, of a nature which justifies their being placed among the best kind of statistical information. In a paper read before the Medical Society of London, on the state of public health, during the six months terminating September 28th, 1850, the following remarks occur.* “The large number of children who annually fall victims to disease in London exhibits a feature in the mortuary reports of the metropolis, which ought to arrest the deepest attention. If Nature’s laws were more frequently followed—were the proper feeding and judicious clothing of young persons more in accordance with common sense, and with their tender constitutions,—and farther, if their physical education constituted a greater part of the duties of their parents and attendants, in addition to their moral culture,—I feel assured, that so large a proportion as 45 per cent. of the total deaths would not be met with among children. Of the 22,816 deaths recorded in London, from all causes, during the last six months, 10,242 of the individuals who died, had not yet passed their fifteenth year, many being even infants or young

* Published in the London Journal of Medicine.

children, whilst 7,787 were in the prime of life, viz., from puberty to 50 years of age, and 4,657 were old people ; thus leaving only 130 cases, in which the age was not stated. These facts incontrovertibly show, that more children than adults die in this great metropolis, notwithstanding the often dangerous, and even insalubrious character of the occupations in which the latter are employed, and their being further exposed to many causes of disease to which children are rarely subjected."

Still more recently, the same physician, in one of the periodical reports prepared by him on the condition of the Public Health in the Metropolis, corroborates the testimony already given.

Notwithstanding the length of this extract, it has so important a relation to our subject, that it is given entire. "In connexion," it is observed, "with repeated statements contained in previous reports, I have again to request special attention to a circumstance, which, although by no means novel, still appears astounding: namely, the fact, that almost one half of the whole deaths recorded throughout London, during the last six months, occurred in young persons, many being even children or infants. This conclusion is based upon the return of ages, stated in the mortality reports, from which it appears,

16 GREAT MORTALITY AMONG LONDON CHILDREN.

that not less than 12,651 cases, out of 25,980 deaths recently registered, took place in patients under their fifteenth year; 8,263 from that age to 60, or in the prime of life, and 4,914 in parties who had passed their grand climacteric; thus leaving only 152 persons whose exact ages were not ascertained. That so large a proportion as nearly fifty per cent. (this was in the six months terminating September 27th, 1851,) of the entire mortality of the metropolis, should have taken place solely among the juveniles, deserves most serious attention on the part of physicians and philanthropists, in order to ascertain how premature mortality may be stayed or arrested. Without attempting to discuss, on the present occasion, the important questions of the predisposing influences and causes of disease among young persons, in the manner they deserve, I will only now remark, that prejudice and long-established usages, tutored by ignorance, not only exercise great influence in perpetuating existing evils, but they often act as repulsive antagonists to progress and improvement, besides being frequently arrayed in opposition to all change, even when recommended by reason or experience. Notwithstanding these obstacles, knowing how essential it is in the cure of *disease*, or in the abatement of any social mischief,

first to learn its cause and nature, prior to settling treatment proper to pursue, I have been induced again to notice the excessive mortality among London children, in order that professional men may further investigate the subject, and so suggest effectual means to remove, or alleviate, similar calamities."

These extracts, which are in close accordance with the facts stated in the preceding chapter, and in that instance extended over a greater area, place the existence of an excessive infantile mortality beyond all question. From various causes, there will always be found a certain fluctuation in the percentage of deaths among children over any given period or district; but the very lowest must yet be regarded as excessive, and as such, obviously admitting, or at least requiring the application of some retarding causes. That out of a hundred deaths, fifty should have taken place in the cot, or cradle, or in the mother's arms, is a fact, one could suppose, which would have excited the most careful inquiries and lively concern.

I propose to consider this mortality in the following manner:—In the aggregate, in relation to age, and to district.

With regard to juvenile mortality generally, the statistical results already exhibited might seem to give a sufficient view of its enormous prevalence.

But it would appear desirable to add weight to these by a few other facts of a similar kind, and conducting us to a similar conclusion, although perhaps, not exactly by the same route. The annual rate of mortality in England may be best understood, by saying, that there are 46 persons living to 1 death. That is, the mortality is 1 in 46. In 1841, the annual mortality per cent. was 2·207, or 1 in 45. In France there were 42 living to 1 death, in Prussia 38, in Austria 33, and in Russia 1 person in 28 died annually. In the latter country, the mortality per cent. is 3·590, or in other terms, out of every 100,000 Russians living, 3,590 died in one year, while out of every 100,000 British living, only 2,207 died in the same period. In several Italian cities the annual mortality of the inhabitants, is from 3 to 4 per cent. In the city of Naples, which has been shown to be one of the unhealthiest in Europe, it appears that 4,046 persons died out of every 100,000 of its inhabitants. From these facts, it is evident that there is a lower rate of mortality among the inhabitants of this country, than in either of those enumerated, and that, in some instances, the mortality falls little short of one-half the sum, as existing in less favoured regions.

The deaths of infancy, childhood, and youth, constitute more than one-third to this swelling tide of

human beings, passing year by year out of time into eternity. While then we may recognise with thankfulness the fact, that a proportionately lower sum of deaths takes place in England than abroad, it should not be on that account supposed that the whole of our own mortality is a circumstance of necessity over which we have no control. In seven years, from 1838 to 1844, the mortality among children in England, under five years of age, was as follows :—

Males	-	-	-	517,897
Females	-	-	-	446,910
				<hr/>
Total	-	-	-	964,807

Or very nearly one million of little children, which had not attained their fifth year, died in the course of seven years. The mortality for the same period in London, is also given as below :—

Males	-	-	-	73,787
Females	-	-	-	65,825
				<hr/>
Total	-	-	-	139,612

The centesimal proportion of children dying all through England, under the age of five years, is estimated at 39·66, that is to say, that out of one hundred deaths, about thirty-nine consist of children under five years, and about six more out of this sum are children under fifteen.

It was estimated in 1841, that there were upwards of 230,000 living children under five years of age in London. There were also found to be more than 760,000 boys and girls, between the ages of 5 and 15. It is therefore evident, that a very large proportion of the population is contained under this term of years, and this may explain, in some degree, the large sums by which the annual mortality of young persons is expressed. But however regarded, it is an acknowledged fact, that the proportionate mortality of children greatly exceeds that of adults, and appears, at its present standard, to exhibit a great excess over what may be considered as unavoidable deaths at this period of existence. The mortality for the week ending Saturday, March 20th, 1852, shows that while out of 1,208 deaths in the metropolis, about 399 were men and women, or might at least be included within the ages of 15 and 60, the sum of 593 represented the deaths of children and young persons under 15, the residue consisting of persons whose ages exceeded 60. We are accustomed to associate life with childhood, and death with old age; but the weekly metropolitan return shows us that two children die for every old man or woman above 60.

Occasionally, the aggregate mortality of children

and young persons is swelled by certain peculiar causes, or diminished by others; but the facts already adduced are sufficient to give the support required to the general statement on which this chapter proceeds,—namely, to the existence of an enormous loss of life, in the earliest periods at which this gift is enjoyed. It is very instructive to take next into consideration the respective ages at which this mortality sweeps away its tender victims. The following table, deduced by Mr. Porter, from the Ninth Annual Report of the Registrar-General, gives expression to some interesting facts on this subject. It is a table of the number and centesimal proportion of deaths, at different ages, that occurred in England in the seven years 1838 to 1844.

Ages at which Death occurred.					Number.	Per Cent.
Under 5 years	-	-	-	-	964,807	39·66
5 years and under 10 years	-	-	-	-	121,562	4·99
10	"	15	"	-	63,690	2·62
15	"	25	"	-	179,985	7·40
25	"	35	"	-	169,670	6·97
35	"	45	"	-	154,524	6·35
45	"	55	"	-	147,727	6·07
55	"	65	"	-	171,814	7·06
65	"	75	"	-	210,565	8·66
75	"	85	"	-	182,941	7·52
85	"	95	"	-	60,664	2·50
95 years and upwards	-	-	-	-	4,839	0·20
Ages unknown					2,432,788	100·00
					3,860	
					2,436,648	

If the table of centesimal proportion be read without regard to the decimal point, it gives the following information. Out of 10,000 persons who died at different ages, 3,966 were children under 5 years, 499 of 5 years and under 10, and 262 of 10 years and under 15, and so on.

The mortality at different ages of childhood and youth has been ascertained in a more minute manner than is above given, and it exhibits certain features to which the attention of medical men, nor less of parents and nurses, deserves to be particularly *directed*. A very elaborate table of the mortality

of infants has been constructed by the Registrar-General, from which, and other sources, the following facts are derived. The existence of three principal periods of mortality may be ascertained from examination of these authorities. These are as follows :— Under one month, under two years, and under ten years of age. After every allowance which it may be necessary to make for erroneous inferences, arising out of that carelessness of registration which may lead the informant to refer to certain popular periods the age at death, the mortality at these three periods deserves much thought and attention.

From careful examination of these statistical data it will be found that the most fatal period of the life of boys, is within one month after birth, when the highest amount of mortality is reached. After this, the deaths decline with great rapidity, rising however at the period of commencing dentition. The total returns for all the months between the first and second year of life, do not come up to the sum of deaths during the first month. After the second year, the deaths progressively diminish, and continue to fall during the remaining period of childhood and youth.

The sum of deaths among girls presents certain points of difference, which are of interest and value.

24 COMPARATIVE MORTALITY OF BOYS AND GIRLS.

There are not so many deaths under the first month, but the proportion is higher than of boys under the second year. From the second to the tenth year, their mortality is not greater than that of boys. But it is a most interesting and suggestive fact, that the period between the tenth and fifteenth year, is one of slightly greater mortality among girls than among boys, and at and after the fifteenth year, this increased proportion is maintained for some time afterwards.

It is necessary expressly to disclaim, in this place, the error of estimating the probabilities of future life to boys or girls at the different ages stated. Tables of mortality only give very vague ideas of the expectation of future life to any individual; and more satisfactory and accurate data exist, upon which to estimate the probabilities, as they are called, of after life, from any given age.

If it be desired to know how many infants, male or female, out of one hundred born alive, die at the respective ages stated, then recourse must be had to tables of centesimal proportion. The annual mortality per cent. of males and females, in the districts of London, at the ages given, is seen by the following table: the decimal point being removed, the numbers living will be taken as 200,000.

Out of 200,000 children of the respective ages mentioned (100,000 being males and 100,000 females) living in England—				Deaths.	
				Males.	Females.
Under 1 year	-	-	-	20,510	15,440
At 1 year and under 2 years				6,708	6,393
2	„	3	„	3,531	3,490
3	„	4	„	2,520	2,481
4	„	5	„	1,853	1,831
5	„	10	„	926	900
10	„	15	„	504	548
15	„	20	„	805	833

An examination of this table will be found to exhibit in an interesting manner the rate of mortality on the sexes at different ages. Thus, while fewer girls than boys die under one year, the number of girls dying between the first and second year approaches closely to that of boys, and thus faithfully indicates the fact, that this is a perilous passage in the lifetime of a female child. I may also call attention to the confirmation of the idea suggested above, as to the mortality among girls between ten and fifteen, and between fifteen and twenty. That these are periods of peril to the life of a girl, is sufficiently manifested by the fact, that at these two periods, their mortality, which is generally below that of boys, considerably exceeds it. Unquestionably this increase of mortality is attributed in some degree to the com-

mencement at the middle of these periods of those functions of life which characterize their sex.

While still on the subject of mortality, as affected by age in early life, it may be useful to state the following popular expression of the fact, which is given in the Appeal on behalf of the Children's Hospital. "A striking illustration of the high rate of mortality in early life is furnished by the statement of the Registrar-General, that of 100 persons born in London, 24 die during the first two years of life, and nearly 11 more during the eight succeeding years; so that 35 per cent., or more than a third of the whole population of the metropolis, are cut off during infancy and childhood."

An inquiry, more popularly interesting than those which have preceded it, is that to which we are conducted when we seek to ascertain the influence which is exercised by the nature of the district, upon the mortality of children. It is certain that an influence of this kind actually exists, and that the high aggregate of mortality among the children of our cities, does not arise exclusively from the existence of a large population of tender years, but receives notable additions in consequence of the greater unhealthiness of the cities, than of the open country. *It is, perhaps, only stating what is popularly believed,*

to say, that more children die in proportion to their number in the metropolis, and in other large cities, than in hamlets, and country places generally. Large inquiries prove this belief to be only too well founded, and some facts will now be adduced, which will serve to show that, from some causes or other, there is a great waste of life among the children of the cities.

The following instances are selected from a number of observations made by the Registrar-General. It so happens, that the extra-metropolitan parts of Surrey have a population but little greater than that of Liverpool, and, consequently, a comparison admits of being rightly made between these districts. Out of 14,450 boys under 5 years, 2,087 died in Liverpool, while out of nearly the same number living in Surrey, only 699 died in the same time. From observations made in Surrey, it appears that 75,423 of 100,000 children born, attain the age of 10 years, and more than half reach the age of 50. But in Liverpool, more than half of that sum (100,000 children) die before they reach the age of 10 years, and only a quarter will reach the age of 50! The same general fact may be represented by the following statements. In Liverpool, upwards of 30,000 infants die before they are one year old, out of every 100,000 born; while in Surrey, out of the same number born,

only about 15,000 die in the same time, and in the metropolis about 22,000 deaths occur. The loss—it should rather be said the waste—of life is consequently enormous in Liverpool, and is large in the metropolis, taking Surrey as a healthy standard. But in other country districts, the mortality is lower than in Surrey.

It is unnecessary to multiply facts of this kind. A careful examination has been made into the nature of the diseases which are more fatal in town than in country districts, and has elicited the fact, that most diseases are much more fatal in town than in country.

I have endeavoured to ascertain the respective influences of town and country upon children of different ages, and the following results appear deducible from the information attainable on this point. Under ten years, the difference is in favour of the country districts—by a very large proportion under five years, and by a smaller one between five and ten. Between ten and fifteen years, there is less mortality among the children of the metropolis than of Surrey; but the Liverpool returns still preserve their bad pre-eminence. The differences between the sexes present nothing deserving of observation.

It may not be necessary, nor is it within the intentions of this work, to enter into a minute exa-

mination of the diseases which chiefly contribute to the mortality of early life. In succeeding chapters, such general statements will be given as will serve to establish a basis, on which to construct certain rules of management, but more than this it will be unnecessary to undertake. It may, however, be here stated as a general fact, that to diseases of the zymotic class, including small-pox, measles, scarlatina, and hooping-cough, a very large proportion of infantile mortality must be attributed. Tubercular diseases, diseases of the nervous system and of the organs of digestion, form the remaining contributory sources to the aggregate of deaths in childhood.

Before concluding the present chapter, it may be useful to recapitulate the general facts it is intended to establish: these are—The existence of an appalling waste of life in childhood and youth. The high mortality of certain periods of life, as within the first month. The comparatively low mortality of girls up to a certain period in their lives. The alarming excess of mortality, under five years, produced by towns;—and lastly, the nature of the general classes of disease contributing to the aggregate mortality in childhood.

Since the facts stated in this chapter have been deduced from careful inquiry into the best sources

of information of this kind, and especially the Reports of the Registrar-General, I feel no hesitation in urging the necessity that exists for this whole subject being carefully considered. It is admitted, that the period of childhood is one full of unavoidable perils. Thousands of children will continue to perish, after the best that human skill can effect, has been done, both for their protection from disease, and for their preservation in it. But such a rate of mortality as we have here been led to consider, cannot be otherwise regarded than as implying a vast waste of precious lives among these tender beings. In the following chapter, I shall seek to exhibit this fact by a general inquiry into the causes of mortality among children and the young.

CHAPTER III.

COMMON CAUSES LEADING TO DEATH AMONG
CHILDREN.

THE mortality of which we have sought to present certain features in the previous chapters admits of an explanation. Its causes are known for the most part, and can be safely conjectured for the rest. Some of these necessarily demand much of our attention. It is not peculiar to man that in his first stage of life he should be, as he is, in continual peril. The young of almost all animate beings are exposed to imminent dangers during the whole period of their immaturity. The same may be also said of plants. The vital powers are low by a law of nature in every being on its first acquirement of them. Disease, privation, or accident fall upon such a being with far more destructive force than in another inured through the passage of time, and thus in a degree protected against such agencies. The

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tenderest of all sympathies is awakened by this very fact, and the helpless feebleness of a little babe becomes the strongest appeal to those of its kind for sympathy and protection. To the vital debility of children at the earliest period of life much of the irremediable mortality at that period is consequently to be attributed.

But while this is fully admitted, a very little consideration will be sufficient to show that many causes may suffice to render this period inordinately fatal to the young. It may be supposed (though not without considerable reservation) that disease and accident constitute the unavoidable causes of mortality to the child, the fatal result being a consequence less of the severity of the injury to the powers of life than of the inability of those powers to resist it. Privation, however, is a cause, by the very term of its expression, of a remediable kind—as a general rule. If an infant die because its mother, through disease, is unable to yield to it the nutriment naturally provided, its death is undoubtedly the product of an irremediable cause. But if an infant dies because its parent, though in health, refuses to yield to the dictates of nature, and permits it to be “brought up by hand,” then the death of that child has arisen from a preventible cause. Had that little babe been

succoured and nourished in the bosom of its own parent, its death had not taken place. Bad diet of one description or another is the fertile, yet preventible cause of the most fearful mortality in early life.

It appears to me necessary to advert to the popularly supposed, and indeed real, danger from natural causes of the whole period of infancy and childhood, in entering upon the present chapter, in order that the fallacy of imputing all the deaths at these periods to such irremediable causes as are here conjectured may be exposed. We are often in danger of classing under a common general head things which have no means of cure and things which are not cured because the means are not employed. I am anxious to put a difference between these very importantly dissimilar cases, and it will be my object in the present chapter to show that upon our own negligence depends much of that fatality of disease whose victims have scarcely passed from the mother's arms to the cradle.

The interesting popular paper of Addison, called the "Vision of Mirza," has often been quoted as giving a striking illustration of the periods and causes of human mortality from infancy to old age. The fable is as follows: the dreamer beholds a bridge

consisting of threescore and ten entire arches, with several broken arches, which, added to those which were entire, made up the number to about a hundred. "I see multitudes of people passing over it," said Mirza, "and a black cloud hanging on each end of it. As I looked more attentively, I saw several of the passengers dropping through the bridge into the great tide that flowed underneath it; and upon further examination perceived there were innumerable trap-doors that lay concealed in the bridge, which the passengers no sooner trod upon than they fell through into the tide, and immediately disappeared. These hidden pitfalls were set very thick at the entrance of the bridge, so that throngs of people no sooner broke through the cloud, but many of them fell into them. They grew thinner towards the middle, but multiplied and lay closer together towards the end of the arches that were entire."

This fine fiction, though truly expressive of the fact, may probably have assisted in confirming the popular idea of the necessarily great fatality of early life, and may thus have contributed to its own verification. Addison regarded the pitfalls of life as hidden—the object of science is to make them apparent. The passengers on that bridge of a

hundred arches trod ignorantly and unconsciously on the trap-doors; but in our own era we have, in many instances, been instructed how to avoid them, and as the result it is a well-known fact that nearly seven more arches (or years) are now added to the career of those passengers who have reached their middle course in safety. But the first five of these fatal arches remain with their thick-set trap-doors scarcely so much as uncovered, or at least unprotected, if we are to judge by the fact that the proportion of the deaths in childhood is at this moment but little less than it was fifty years ago.

It will scarcely be considered necessary in our time to say that in all considerations of this kind regard must be had to the operation of certain well-known natural laws, the constant ordering of Divine Providence being thereby not for a moment set aside, or regarded as inessential. If by knowledge given from Himself it has pleased God to instruct man in certain truths of importance to his physical well-being, and he wilfully slights the knowledge thus attainable, the painful consequences are in a great degree the result of his own imprudence. That commander of a ship who, with a falling barometer, a confused sea, and a changing direction of wind, persisted in carrying all sail, and continuing

his course, must regard himself as the author of much of his own calamities if on the bursting of a tornado his ship were in peril of being lost—for science would have taught him that these were indications of danger, and pointed a way of escape.

Statistical facts have already shown the existence of an immense mortality during the thirty days after birth. It is our duty to inquire into the causes of this loss of life. A variety of hostile circumstances appear to oppose themselves to the progressive existence of the delicate creature concerned. The feeble state of the powers of life—to use a convenient term—has already been adverted to as among the most formidable of these. It may appear almost paradoxical, but it is a fact well established, that some infants die because they are too weak to live. They have no positive disease, but are unable to continue an independent existence. This is either the result of disease in the parent, or it follows as a natural consequence upon premature birth. It is proved that not less than twenty-five children die every week in the metropolis from premature birth and debility. Probably in few of these instances would any fully-developed disease be found to exist, and the infant dies simply from a want of sustaining vital power. It is as though a piece of

mechanism ceased to move because the prime mover—a spring or a weight—lacked the requisite force to propel the machine. So with these feeble or prematurely-born children—they die without much suffering, and their little life is gently extinguished, like the flame of a taper in moving air. In cases of extensive disease in the parent, such as consumption, it not unfrequently happens that, after passing safely through the perils of childbirth, the mother rapidly declines, sinking into the grave, to which she is often followed by the frail body of her infant.

It is by no means improbable that many infants, and delicate children, have their powers of life depressed, and their existence consequently shortened, simply from exposure to the air, in other words, merely from cold. It has been stated by the Registrar-General that a sudden fall of the mean temperature of the air from 45° to 4° or 5° below the freezing point (32°) of water, destroys from 300 to 500 lives in London, and produces the same results on a larger scale all over the country. A mild season, other things being equal, is always less fatal than a severe one. If the mortality were all the year at the same rate as in winter, upwards of 90,000 more deaths would take place than if it were all the year at the same rate as in summer.

This exhibits the fatal effects of cold upon the total mortality among all ages and classes; but the infant and the aged man form the largest contributors to its sum.

It is a well-known fact, that the young of all warm-blooded animals have a much lower power of sustaining an independent temperature than the adult. And it is interesting to notice that in proportion to the period of time during which the young is dependent on its parent for its support, so is its power of maintaining its temperature. If a very brief period of parental care is necessary, then the young being has early and sufficient powers of generating animal heat. But if, as with the young of our own species, the being is long dependent on its parent for food—longer, it is to be observed, than that of any other animal—then its temperature cannot be duly maintained by its own unaided powers, and the warmth of a parent's bosom is absolutely essential to its well-being.

That the observations just made have their foundation in fact is strikingly demonstrated by an examination of the rate of mortality among children under one month, in winter and in summer. The statement about to be made may seem almost to exceed the limits of probability, but it is a


well-ascertained fact, that the mortality of infants under one month is almost doubled in winter as compared with summer—a result evidently due to the external temperature.

In the case of infants prematurely born, the destructive influence of a low external temperature is among the facts best known to medical science. Instances have occurred repeatedly in which infants apparently healthy, but born in less than the due time, have had their lives prolonged, and in some instances to the full attainment of maturity, by carefully adopting every known means for sustaining their animal heat. Among these, the enveloping of the child in some soft non-conducting substance, such as down or cotton wool, has been most useful.

It is to be regretted that in the case of infants born at the full term of 280 days, or approaching it, little attention has generally been paid to this most essential point. The little being, hitherto protected from the smallest vicissitude of temperature, is suddenly plunged into a cold and rare medium, much below the proper temperature of its own body. The first effect on the child is to produce an act of inspiration, and thus, by a wise and beautiful arrangement, to set in operation those actions of life, the principal object of which is the due maintenance of animal

heat. From that moment, by our ordinary arrangements, the child has to maintain the temperature of its own body, while as yet its respiratory powers are feeble and imperfect.

It is now very generally acknowledged that the function of respiration constitutes the principal source of heat in the animal frame. In an infant it may be regarded as the sole source of warmth, since it is incapable of the development of heat by muscular exertion, and that developed indigestion must be very small in amount. If an infant, soon after birth, be carefully watched, and its respirations counted, they will be found to present a very marked difference to those of a child three or four years old. They are shallow, quick, panting, and the walls of the chest exhibit little of that heaving movement which forms so interesting a phenomenon in the breathing of a healthy child of four or five years old. From merely casual examination of its chest it might be conjectured that the lungs were at first only imperfectly expanded; and such is found to be the case when death takes place at this early period. An infant is consequently under these disadvantages—that it has to maintain its own heat by means which are barely equal to that function, and which become necessarily alto-



gether inadequate to its fulfilment when an **unusual** call is made upon them through negligence or privation. The low temperature of even a healthy new-born infant must have been noticed by every one who has held the hand or touched the face. It has been found by experiment to be really under that of a child of five or six years old.

If such be the condition of a newly-born infant, its powers of respiration so feeble, and its temperature feebly sustained—and this in the most healthy children—it is obviously of great consequence to direct attention to this point in the management of children at this early period. How greatly this has been disregarded in the general treatment of newly-born infants must be a subject of familiar knowledge to any person conversant with the ordinary management of a lying-in chamber. It is important to know that infants actually perish from imperfect expansion of the lungs—called by Dr. Jorg by the name “atelectasis”—which simply implies the condition of the lungs, as only partially inflated. One of the most frequent causes of this state is exposure to cold. It is not unfrequent to meet with instances in medical practice which are obviously cases of imperfect expansion. An infant accidentally born in a cold apartment, or in circumstances where it is

exposed for a short time to cold air, cannot expand its lungs perfectly, and frequently its temperature and vital powers sink together, no subsequent care being available for their restoration. It is observed also that still-born children, in whom the effort to resuscitate life has been successful, frequently die afterwards, apparently from the same cause. Such instances have presented themselves to my own notice; and as they are frequently attended with great disappointment to the parents, it becomes the duty of the medical attendant to caution the friends that the life he has been instrumental in recalling may still be taken from them by a cause over which he has little control.* In such instances, after carefully carrying on the powers of artificial respiration until the circulation is fairly established, a varying period will often find the rescued infant again descending the path to the tomb. The failing pulse,

* While these sheets were passing through the press a very interesting but fatal case of imperfect expansion of the lungs was attended by the writer, and became the subject of medico-legal inquiry, in order to ascertain the precise nature of the circumstances in which it was born. The child lived seven weeks after birth, and at death weighed actually less than when born. The lungs were only partly inflated, and the heart in what is medically called a foetal condition.

lowering temperature, and faint attempts to fill the lungs, are then fatal tokens of the approaching bereavement.

I have dwelt at some length on the depressing influence of a low temperature on very young children, as a cause of much of their mortality under the first month, because I believe it to be at once the least regarded and the most fatal of causes at this period. The attention of the medical man is generally so largely occupied with investigations into diseases as the causes of illness and death, that it is apt to pass by the apparently trifling subject of preserving at a due standard, and with as little as possible loss to itself, the temperature of a new-born infant. This, as the duty of the nurse, is often left to them without an inquiry into the manner in which it is fulfilled.

Could it be possible to obtain a registration of deaths by classes of social position, a large amount of light would be thrown upon the variety of causes which bring death to the mansion of the wealthy or the humble tenement of the poor. It has been well said by Waller,—

“Famine, want, and pain
Sunk to the grave *their* fainting limbs : but *us*,
Diseaseful dainties, riot and excess,
And feverish luxury destroy.”

In the brief but fatal period now under consideration such causes as "famine, want, and pain" act with manifold more force than at any other period of life. In what a pitiable condition is that poor infant whose enfeebled parent lies herself almost destitute of apparel, and part of whose scanty covering must be given to protect her child with! How is an infant in such a state to maintain its temperature, or to resist the accumulated conditions hostile to its existence under which it is placed? The mortality among the children of the poor is one of the most painful of the many sad facts presented to a medical man's experience, for it is often chiefly attributable to causes over which his art has no power of arrest.

That the well-being and morality of the parents have much relation to the safety of the child in infancy is a fact established by the statistical experience of all civilized nations. Whatever may be the results of individual inquiry on an insignificant scale, such is that arrived at from observations extending over a considerable time, and embracing a vast population within their points of estimation. Not less than seventy or eighty children die annually in London in infancy, the victims of a dreadful malady acquired from the immorality of the unhappy parents.

In one week of the present year not less than eight infants died from this cause.

The moralist will be well prepared to admit that the duration of life, as a general fact, is proportionate to the happiness and well-being of the class or community. "A miserable life," observes a distinguished statist, "is soon extinguished." The children of the immoral experience the full force of this law. The following remarks of a distinguished writer give expression to painful facts on this subject:—"The invariable fact that the mortality among the illegitimate is far greater than among the legitimate, and that many more of them are still-born, shows clearly enough how much more unfavourable their position is from the first. Who can doubt that their bringing-up is much harder and more difficult? that the existence of a class of men, bound to society by few or no family ties, is not a matter of indifference to the State? The great majority of foundlings are illegitimate, which of itself shows how little, as a general rule, the mothers can or will care for these children. It is beyond doubt that fewer illegitimate children grow up to maturity; that they get through the world with more trouble than children born in wedlock; that more of them are poor; and that, therefore, more of them become

criminals. Illegitimacy is in itself an evil to man."*

Nothing exhibits in so melancholy an aspect the low moral condition of the poor of large cities, such as Manchester, as the fearful records of infantile mortality. The registrar of one district gives the annexed mournful picture of the condition of these pitiable little beings:—"Here, in the most advanced nation of Europe, in one of the largest towns in England, in the midst of a population unmatched for its energy, industry, and manufacturing skill—in Manchester, where Percival wrote and Dalton lived—13,352 children perished in seven years, over and above the mortality natural to mankind. These little children, brought up in unclean dwellings and impure streets, were left alone long days by their mothers, to breathe the subtle, sickly vapours, soothed by opium, and when assailed by mortal diseases—their stomachs torn, their bodies convulsed, their brains bewildered—left to die without medical aid, which, like hope, should 'come to all,' the skilled medical man never being called in at all, or only summoned to witness the death, and sanction the funeral."

* Bernoulli ; quoted in Sixth Report of Registrar-General.

Neglect on the part of the parents proves only a too fruitful source of death to thousands of children born in poverty. The negligence of the poor as to the health of their offspring forms only another instance of their want of forethought, if of no other feeling; for the same children whom they permit to waste away under disease were given as a providential means of succour to themselves in sickness and old age. With a view to ascertain the proportion between cases of sickness occurring in the adult and in those of tender years, I instituted a careful inquiry into the records of a Dispensary* in the vicinity of the spot where I reside. The following was the result. During a period of about three years, in the course of which cases of sickness in persons of all ages came under my care, the numbers passing under treatment were (in round numbers) 3,000. An analysis of those relieved shows that one-third, or about 1,000, were cases of disease among children. These cases were, with few exceptions, acute in their general character. But from the tables of mortality a result very different to this should have been shown. Those unerring records teach us that

* Chelsea, Brompton, and Belgrave Dispensary, Sloane Square. The numbers given in the text are below the actual sum.

the number of children who die is more than one-half that of deaths in the adult. The conclusion is, therefore, obvious, that numbers of poor children are sickening and dying in their squalid homes, neglected by their parents, and unvisited by medical skill, until they are too surely on the borders of the grave.

It is the parents chiefly who come in time for advice; for when disease falls upon them, its imperious summons may not be disregarded. Individual instances, illustrative of the same fact, are of every-day occurrence in medical practice. I may merely mention one as typical of many. A little girl, seven years of age, was brought by her parent for treatment, in consequence of "lameness, and an ulcer in the leg." Examination of the limb revealed a sad spectacle; the ankle-joint was wholly involved in disease, and was in such a swelled and painful condition that the child could not walk without great agony. For five months this poor little girl had suffered from this diseased joint, yet the parent could endure to see her child day by day becoming worse, until at length three or four abscesses burst about the joint, and the child's limb was in a condition which would at one time have been deemed sufficiently bad to require amputation. Medical assist-

ance was now sought for the first time. Such neglect appears almost inexplicable, since gratuitous aid could be very readily obtained, and since, moreover, the little victim must, if her life was spared, support herself by her own exertions—a thing rendered doubly difficult by the misfortune of a crippled limb.

Several circumstances render this tardy seeking for medical aid a serious matter, leading to fatal results in childhood. Every one must have noticed, in some form or other, the extraordinary activity of the vital functions in children. A child will be very feverish, and apparently very ill, on one day, and on the next will seem as though nothing had been amiss. Disease runs a very rapid course in their susceptible bodies; it is soon lighted, and generally soon extinguished. But this very circumstance adds a new element of peril to the case of a sick child, and one which exists not only in the habitations of the poor and destitute, but is also found, though to a less extent, threatening the families of those who are rich and well provided for. This is the danger of delay.

It may be and probably is true that some English children get a great deal too much medicine, but it is certain that many perish for want of a very little,

administered in due time.* It is the regret of every medical man that he is seldom, if ever, called in at the commencement of an attack of illness in a child. The disease must reach a certain degree of intensity before it is thought sufficiently momentous to require attending to. The means which might then have arrested its progress are now not unfrequently required to combat its severity, and the issue is, in very severe cases, far more doubtful than it would have been had an earlier application for assistance been made. In certain types of diarrhoea among children—as, indeed, among adults also, though to a less extent—delay is absolutely fatal. The child dies, not because medicine has no power over the malady, but because it was not resorted to in sufficient time. It is the delay, not the disease, which is fatal in its character. Statistical returns have shown the force of these remarks, by disclosing the fact that such diseases as are of this nature always sweep away hundreds of children among the poorer classes, who either cannot or will not obtain medical aid, whilst they generally fall lightly upon the

* Out of 279 children who died in one district in Manchester, the deaths of only 126 were certified, so that 153, or *more than half*, died without any medical assistance whatever.

children of the wealthier classes, who, on the observance of untoward symptoms, summon proper assistance at the earliest period. Delay gives to disease its power, and too often to death its early victim. The lamentations and self-reproach of parents who too late sought help for their sick children enter into the familiar experience of all engaged in the practice of medicine.

Defective nutriment must also be considered as a prolific cause preparative for death in infancy and childhood. To those who are not in the habit of examining the details of the weekly returns of mortality in the metropolis, the fact will appear very startling that one important cause of death among infants is there to be found under the term "privation of breast-milk." During the years 1848 and 1849, no fewer than 347 infants died from this cause. And since under this cause of death the returns will obviously be more probably below rather than above the truth—many infants perishing from an atrophied state of body, which first began to suffer from want of parental nutriment—the mortality just alluded to deserves the more attentive consideration. The following observations of Dr. Webster deserve insertion in this place:—"One important cause of death among infants merits more than a

passing remark at present, as the evil unfortunately appears increasing. I allude to the 'privation of breast-milk,' the best nourishment for infants during the first months of their existence. From the want of this, 107 infants perished in London during the last six months; and if the 89 individuals similarly sacrificed in the two quarters immediately preceding be added, it appears that 196 helpless fellow-creatures have fallen victims to this privation during the period of twelve months. This was doubtless in some instances the consequence of fashionable mothers neglecting to suckle their own offspring, or, in others, to the poverty of parents, tempted to leave home and their new-born children by the inducement of high wages, ample food, and many creature comforts they would enjoy as wet-nurses in the houses of the more opulent. Such a custom, unless in particular instances, when the mother is totally unable, from disease or physical causes, to nourish her own infant, should be discountenanced; since experience amply proves that any deviation from the law of nature is generally detrimental both to parent and child." These remarks, being written without the especial object of exclusively exhibiting mortality among the young, are the more valuable, as confirming the views adopted in this work.

Unquestionably, the separation of an infant from that source of nourishment provided by the Creator cannot fail to be followed by serious consequences to it. The nature and composition of the milk intended for a new-born infant greatly differ from that adapted to the nutrition of a child five or six months old. If, therefore, the infant is transferred at once to a wet-nurse, the change is highly undesirable; and if brought up by hand, universal popular experience has shown the fatality or debility attendant upon the best-ordered system of artificial feeding. Among the poorer classes it is appalling to contemplate the fate of poor little infants left to the care of ignorant persons, while the parent, transferring its nutriment to another, is herself in the enjoyment of the luxurious system of living considered necessary to her due fulfilment of the duties of wet-nurse. These pitiable children, robbed by their parents of the food naturally intended for them, receive instead crude and indigestible portions of bread, gruel, and similar substances, the first consequences of which are evidenced by their blistered and aphthous lips, and the ultimate result is their early consignment to the grave.

The incredulity with which the warnings of the medical practitioner are received, and the wilful

neglect of his counsels, are subjects of common remark. On no subject have the monitions of medical advisers been so much disregarded as on the dietetic education of the infant and young child. It is often difficult to convince even a parent that any substitute for the food provided by nature must be prejudicial to an infant, and it is wholly out of the question to persuade the nurse into a renunciation of her course of early gruels and messes of boiled bread and milk. The parent may be fully equal to the due nutrition of the child, and anxious to fulfil that duty; but one of the indispensable conditions of the nurse is to superadd somewhat of her own composition to the natural food. Improper nutriment becomes, consequently, a cause of disease in very early life, at a period, in fact, when of all others it might be least expected to exist. The abominable dietetics of the lying-in chamber are regarded by every reflecting medical practitioner with abhorrence, and indeed with dismay. Under the idea that the breast-milk is too poor for the little infant, it is drenched with stews of biscuits, bread, farinaceous compounds, and cows'-milk, often rendered fermentible with sugar, and dangerously irritating by the addition of various spirituous stimulants. To suggest that, instead of all this, the infant

should be quietly left with its mother, and should receive nothing but that which nature has furnished, when in due quantity and in a healthy state, would effect much benefit for the helpless sufferer. It is not difficult to tell how much of the dyspepsia, diarrhoea, and aphthous mouth of very young children may be traced to the indefatigable assiduities of ignorant nurses in the administration of improper food.

The same evil attends the child all through infancy and childhood, and even in youth. Improper food destroys many more precious lives than absolute want of food. Children are repeatedly brought to the institution before alluded to, with blistered mouths, feverish skin, and diarrhoea, bringing in their hands pieces of apple, oranges, bread and butter covered with sugar, buns filled with currants, or great pieces of sweetmeat, and such like. Such cases present a picture of associated cause and effect. A medical experience of many years among the poor population of several districts of the metropolis which has led me day by day into their abodes, has impressed me more powerfully than I am able to express with the enormous evils of improper food among their children. Those who are scarcely able to obtain a meal of animal food for their families day

by day, will give to their children either the means of obtaining the most pernicious articles or the things themselves. Expostulation, even in illness, is insufficient to prevent this evil, and only the most severe and stringent measures are of avail to keep from the little sufferer the supply of those substances which have contributed to bring on his ailment. When a child is healthy and robust, and receives every day good and appropriate food, it will often partake with impunity of many substances, in small quantities, which are not in themselves of a very desirable or suitable nature. But hundreds, even thousands, of the half-starved children of the poor, whose meals are often at long intervals, and then not of the best kind, are very differently placed when indigestible substances are given to them. Their already enfeebled digestive powers are inadequate to the assimilation of many of those things comprised in a child's list of luxuries, and of which they receive a larger proportionate amount than the others.* That which constitutes their regular food,

* As a curious instance in confirmation of this statement, I may mention the case of a little girl six years old, to whose relief I was recently hastily called. This child had partaken of very little food, simply bread and water, and a little bread and milk, for some days, but on the day when she was taken ill, a portion of a fruit pudding was given to her.

also, is often of the most indigestible and improper description.

Since the subject of diet will again receive notice in these pages, and regard is here had only to its influence when improper, as a cause of fatal disease, it is unnecessary to inquire whether, among the children of the higher classes, this evil may not be found to be very prevalent. That it is less fatal may well be admitted, for reasons just given; but every medical practitioner's experience must have convinced him that in the treatment of disease among the children even of the best-informed persons his efforts are repeatedly baffled, simply in consequence of the disregard of his injunctions as to diet and regimen.

Want of food, as a fatal cause among children, is, alas! one of not infrequent occurrence, although not so often officially entered as others. Many a poor child is sent to the Ragged School without food in the morning, and often continues without any until the evening. Had I not had the most undoubted evidence of the fact, I had scarcely been able to

Towards evening, as the child was preparing for bed, she fell speechless into her mother's arms, and was unable for many hours to articulate a single word. Ultimately she perfectly recovered, on the due restoration of a healthy condition to the disturbed digestive organs.

believe the degree of privation which many a little child has to undergo on many days of the week. To be without a regular meal is one degree of starvation, but to rise without breakfast, and often to continue the day through, fasting until evening—this is a pitiable state, and numerous are the pallid sufferers to whom it more or less applies.

Privation of food is never unattended with other forms of want, and it is therefore not surprising that disease, when it seizes upon this class of victims, has a short and easy task to accomplish. It is, in addition, a well-known fact that privation in all its forms is the first cause of those debilitating maladies which thin the ranks of the poor children of the metropolis and other large towns.

Insufficiency of clothing, and improper clothing, although less obviously prejudicial, form fatal causes of much importance. It is unnecessary again to advert to the feeble powers of resisting cold possessed by young children; yet how many are to be found in our streets and lanes whose thin garments are wholly insufficient to protect their tender bodies from atmospheric severities. Is it any cause of wonder that tubercular diseases in many forms, or inflammations attended with lasting lesions to important organs, are so often to be found among the

children of the poor? The clothing of children more fortunately situated is frequently of a very improper kind, and such as to favour the progress of insidious disease, if not to develop it in an active condition. It has been justly said by a careful medical statist, that "greater attention to the clothing and diet of the children of the metropolis would certainly give a more favourable aspect to its mortuary returns."

While investigating the causes of mortality in early life, our attention ought to be directed to those circumstances which are comprised under the term "deaths by violence or accident." About 1,400 persons die annually in the metropolis from these causes. A very considerable portion of these deaths has been found to occur in children under fifteen years of age. Burns and scalds are the most formidable and fatal of these causes. To any one who will reflect on the large population of children in the metropolis, on the negligence with which many of them are treated, and on their own thoughtless and helpless condition, it will scarcely appear surprising that so many perish whose deaths are to be reckoned under this painful category. There occurs a touching and beautiful recognition of the manifold dangers attendant on the path of a little child in a

portion of the services of the English Church, which is expressed in the petition, "That it may please Thee to preserve all women labouring of child, all sick persons and *young children*."

Improper domestic management tends in a variety of ways to add to the perils of early life. Among other ways in which this evil manifests itself, the drugging of children with powerful and unsuitable medicine may be considered as a very prominent one. It might be supposed that this was confined to the poorest classes; but a reference to that periodical directory—which is after all only the expression of popular wants, real and imaginary—the advertising sheet of a newspaper, will disclose a very different view of the case. Quack medicines are, unfortunately, not compounded for the adult alone: helpless children have cordials, soothing syrups, worm-cakes, and such like, prepared expressly for domestic administration. The enormous quantities of these medicines sold almost exceed belief.* In Manchester, the quantity of opium sold in the form

* "A lady," observes the acute author of a little book again to be quoted, "not long since complacently informed her medical attendant, that for the use of a baby, then about eight months old, she had spent nine pounds in 'Infants' Preservative!'"

of an elixir, for the purpose of soothing children while the parents are absent at the mill, was so large as to attract public attention. The same vicious habit continues in force still; nor is it confined to Manchester and its operatives, but is also found to prevail in every large town, to a greater or less extent. What is given by the poor parent in the cheap form of some syrup is administered by the better circumstanced in that of the quack medicine. Except in the simplest cases, the whole system of domestic medicine is reprehensible, and instances of its pernicious consequences might be adduced without number. In many cases it is little short of dallying with the powers of disease and death; and that parent will consult best for her family, who, distrusting her own judgment in a matter so important as the health of her children, seeks medical aid in time. It is, beyond question, the neglect of seeking for timely advice which in many instances renders the attack prolonged, and the consequent medical attendance costly.

Only under a feeling of imperative duty do I consider it falls to me in this place to advert to another cause of increasing fatality among children—I allude to the practice of homœopathy. In some diseases affecting the adult, in which attention to diet and

regimen are of principal importance, it can do little harm to drink now and then a glass of pure water into which an infinitesimal dose has been placed—often of insoluble matter—as a presumed millionth of metallic arsenic or sulphur. But in diseases of children there should be no frivolous trifling of this kind. If I saw a little child labouring under pneumonia—its panting breath and burning skin sought to be eased by such a mode of treatment—I would have no hesitation, in the event of a fatal issue, in pronouncing that child's death to be the result of having done nothing to arrest its malady. May every parent into whose hands this book comes take heed of committing her child to the combined dangers of inflammatory disease and homœopathic inaction! The rapidity, the activity, the intensity of such disease in children requires to be met by similar treatment, and if not so encountered a serious and even a fatal result can never be far distant.

Another sort of bad domestic management is often very fatal in its ultimate consequences to children. This is the want of personal cleanliness, of cleanliness of apparel and of apartments. A dirty child, clad in dirty clothes—that is, clothes saturated with organic matter—is always more or less unhealthy, and if it falls sick has a poorer chance of recovery to health

than another. It is very probable that much of the diarrhœa of children of the poor, in summer, is a consequence of these evils. Some valuable researches into the air and water of towns have shown that the organic matter thrown off by every human being is continually condensing even upon the furniture of our houses, much more on the garments we wear. The skin of a child is well known to be more delicate, more susceptible of impressions, and its functions to be more actively discharged, than those of the adult. It is therefore little to be wondered at that the extensive interference with a surface so important as this, is attended with bad results to the child's well-being. Much sickness, and much debility little short of sickness, among the children of the poor, and it may be among those just removed from poverty, arise from this cause, rendering disease very fatal in its consequences.

A review of most of the causes adverted to in this chapter will show that they are not generally of an irremediable nature. Surely no person will regard bad diet, personal uncleanness, neglect, false treatment, and the like, as fatal causes over which we have no control. I adduce them in this place for the very purpose of obtaining, in some degree, their removal. It is of all things difficult to obtain the

removal of an every-day habit of life; and among the poor there is unhappily little mental energy left, after providing for daily wants, to go very minutely into such things as are here shown to be intimately related to their own well-being and happiness. I venture to hope, however, that those whose charitable task it is to go from door to door among the poor population of our towns and villages, with the view of diffusing the sacred truths of the Gospel, may, after perusal of these pages, add—as many among them, indeed, are wont to do—to the value of their mission by offering words of instruction and advice on such points of domestic management as we have seen, in this chapter, to bear the most serious relation to the health and existence of families.

CHAPTER IV.

CAUSES DISPOSING TO DISEASE IN EARLY LIFE.

THE causes of mortality treated of in the preceding chapter might be thought to include, of necessity, those also of disease among children. That these causes are associated together cannot be denied, and they are frequently of a common nature, since the existence of mortality implies the pre-existence of disease—as a general rule. But it is important to remark that there exist certain causes of disease not immediately attended with a fatal result, and certain others having their origin in the physiological condition of the child itself, which are both peculiar and very influential in their operation. Perhaps these might be better called causes disposing to disease than predispositions to disease, and the first of these terms I have accordingly selected as the title of this chapter.

Care should here be taken to give sufficient prominence to a fact very repeatedly lost sight of, namely,

the prevalence of disease unattended by mortality among children. It is not enough to bring into view those circumstances which tend to bring the brief career of a child to an abrupt termination, but it is also necessary to direct the attention of those to whose charge—whether medical or domestic—they are committed, to causes rendering these children either debilitated or the victims of some slow disease extending its influences far along the journey of life, if not even to its final and premature close. Weakly children, as they are often popularly called, do not necessarily die in the period of childhood or youth, and sometimes attain much strength and solidity of constitution in after life. This class of sufferers often receive much sympathy, and are watched with peculiar care. But often, too, they experience much neglect, and their continual ailments come to be regarded as a thing of course. Weakly children among the poor seldom come to maturity; their existence is often felt to be a burden to the family, and the neglect consequent thereupon contributes, with the diseases under which they are constantly labouring, to conduct them to an early grave.

What is implied under this term is in reality that such children are habitually out of health. Their best condition is not that of compete health and well-being,

but a lesser degree of illness. Such children are, in fact, at no time in the enjoyment of a perfect fulfilment of those functions of life which constitute a state of pleasurable existence in the human frame. They are incapable of exertion without speedy fatigue, and are removed from their more robust companions by their inability to share with them in the sports and exercises of youth and childhood. This condition is very generally due to an original defect in constitutional vigour, and not unfrequently to that fearfully prevalent state, called the tuberculous temperament. With the utmost skill in treatment, and the most judicious care, such children remain, often from the first, little benefited by medical or domestic attention, and are swept away by the incursion of some acute malady, or by the active development of disease long slumbering in some important organs.

But it is certain that a weakness of body may be induced in a child otherwise indisposed to disease or ailment. A weakness of body may be induced much earlier than it would otherwise have occurred in a child not originally possessed of very strong constitutional powers, and its life may be thus unnecessarily shortened and brought within the term to which, with proper care, it might have extended.

It is not going too far, perhaps, to state that the tuberculous or scrofulous temperament may be generated or produced in a child originally healthy by the long-continued operation of any of the causes which are commonly held to be capable of inducing this diseased state. But it is an unquestionable fact that mismanagement may be followed by the early awakening of every feature of this condition, and the child may perish of tubercular deposits, which under more favourable circumstances might have been long restrained, and ultimately the tendency might have become quiescent for years.

Careful investigation has shown, that out of more than a thousand patients admitted at the Brompton Hospital for Consumption, not more than a fourth had lost a parent by this disease. If it be supposed that so large a proportion as one-half were the inheritors of a tuberculous temperament, it remains tolerably certain that in the other half this condition must either have been congenital, or induced. Since it was not hereditary, it must consequently either have existed as a radical defect at birth, or must have been produced by certain causes, coming into operation afterwards. It is not as yet satisfactorily demonstrated what may be the producing causes of this

formidable and fatal defect. But many circumstances are known to act by giving it intensity and power. Full allowance being thus made for the results of hereditary transmission of a certain vital debility, there still remains a large mass of weakness and positive disease, which not being referable to such a cause, leaves us at least to a strong conjecture, if not to a certainty, that this condition may be attributed to a large extent to causes operating during childhood and youth.

“Weakly children”—to continue the use of this term—are far more frequently found among the occupants of towns than among those of country villages and hamlets. It has been already abundantly shown that a fearful rate of mortality prevails among children in towns, and this too surely indicates the co-existence of a generally depressed state of vital force, and the prevalence of great debility among many children. A constant rate of excessive mortality cannot, in fact, exist, without there being at the same time a large number of the individuals to whom it relates ill or ailing. While many die, many more are in preparation for death. And this refers not merely to the sick, but to the more extensive class of the pining and languishing—in short, to “weakly children.”

Long-continued medical experience has shown that more children are sick, more are ailing, more suffer, fewer recover, and more die in large towns. This teaches us that the period of childhood is one of which the liability to disease may be increased or diminished to a very notable extent by the influence of external circumstances. Regarded in the aggregate, the children of this kingdom may be considered as all of one family, but the members of it scattered about and variously exposed to causes of danger and influences of depression, or, on the contrary, to such conditions as are best calculated to promote health and continuance of life. What are these circumstances? and why are the children of this great family, whose lot is cast in the cities, more feeble, more exposed to disease, and more numerous its victims, than those whose homes are among the fields and woods? Why are so many weakly children included among the young population of towns, and comparatively so few among those of country places?

It appears scarcely necessary to proceed to a further demonstration of the existence of such a state of things, since it is admitted by universal experience for truth, and is capable of the most powerful proof by appeal to statistical facts. Let the reader, if he would see evidence of the respective condition of


town and country children, contrast their external aspect only, and the result will satisfy him that there exist elements of depression actively operating in the outward history of the one child which have no existence with the other. What may these elements be?

I feel little hesitation in stating that they are chiefly want of light and want of air. Town children are perhaps on the whole not worse fed nor worse clad than country children, and I am therefore strongly disposed to believe that the debility and the proneness to disease of these children may be very safely attributed to the two causes just named. The evidence proposed to be adduced in support of these statements will not, I venture to believe, be refused admission by any thoughtful person.

It will be, probably, more easy to convince the general mind of the fact that want of air is a cause of disease, or of proneness thereto, than want of light. Yet the latter would not be thought of secondary importance if only the effects of this wonderful principle, or combination of principles, upon the organic and inorganic worlds were more fully appreciated. It is very easy, it is true, to show that air is directly necessary to animal life, since a bird or a small animal kept under a glass vessel without

renewal of air would soon perish. Facts of this gross and palpable kind often give an undue importance to the subject they are intended to illustrate, while the less sensible influences of more subtle agencies are disregarded as inoperative, or to so small an extent as to be inappreciable. This cannot be said, however, in strictness with regard to light. If we can kill an animal by denying to it fresh air, so also can we destroy vegetable life, and actually produce disease and decay by denying to a plant the fresh and wholesome influences of the sunbeams. It is true that we cannot see the immediate results of exclusion from the light in an animal as we may observe them in plants. But the facts yet to be stated will show, in the most conclusive manner, that we are disregarding a most potent and healthful influence when we set aside as of minor consequence the due exposure of the human body to the effects of sunlight.

The remarkable words of Lavoisier, a celebrated French chemist and philosopher, indicate a perception of this truth far in advance of the time in which they were uttered. "The fable of Prometheus is but the outshadowing of a philosophic truth; where there is light there is organization and life, and where light cannot penetrate, there death for ever




holds its silent court." We are able, by recent researches, to demonstrate the entire truth of this forcible sentence. It has been shown that the distribution of animal life in the sea is to a great extent influenced by the degree of light received at different depths. Thus it is a remarkable result of Professor Forbes' dredging researches in the *Ægean* Sea, that below a certain depth (300 fathoms) no species of invertebrated animals can exist, and a series of zones of animal life have been marked, the limits of which are very precisely defined, which indicate in the most beautiful manner the dependence of these occupants of the waters upon the energizing influence of the solar ray.

The influence of light on colour in the animal world has received less attention than it deserves. It constitutes, however, a very attractive study. In virtue of some law unrevealed, the colour of animated beings is very remarkably affected by the light to which they are exposed. It is well known that in plants the green colour of the leaves is not produced in the dark, but quickly appears on exposure to light. Plants grown away from the light, and being in a sickly half-blanced condition, are technically called etiolated. It would appear, however, that animate beings can be also etiolated, for it has been found that

certain insects, if reared in the dark, grow up almost colourless. The magnificent plumage of birds, and the gorgeous colouring of shells, of fish, reptiles, and insects of the tropics, is undoubtedly connected with the intensity of solar light enjoyed. The colour of the human skin is also in a remarkable manner influenced by its exposure to light. The term "sun-burnt," is popularly expressive of this fact. It is by no means improbable that colour has a relation to health, although its precise features have yet to be recognised. It is very certain that that colour of the skin which is produced by full exposure to the light, is always popularly recognised as a token of health, although perhaps not in every instance with entire correctness.

In addition to the luminous rays proceeding from the sun, are other emanations not luminous and not calorific. These are called chemical or actinic rays. They are extremely influential in the inorganic and vegetable kingdoms, and we can scarcely conceive them to be less so in the world of animals. Rays which have such energy as to induce chemical decomposition in certain bodies exposed to them, with explosive rapidity, cannot fall upon the human or animal frame without effect. Without accurate data to proceed upon, it may yet be assumed as highly



improbable that our bodies can be daily bathed in an atmosphere of such rays without catching some of their delicate and subtle influences. It would appear not improbable that the marks, called "freckles," are a result of the operation of these chemical rays.

Setting aside all conjecture, experiment has shown that light exercises the most marked influence in the development of animals. The following results, obtained by Dr. Edwards, are well known to physiologists. By repeated experiments with tadpoles, he found that with constantly supplying them with food and fresh water, but entirely excluding them from the light, he could arrest their development for a considerable time, so that instead of becoming frogs, they continued in the state of tadpoles long after others exposed to light had become transformed as usual into frogs. It has also been found that the development of the larva of the silkworm from the egg of that insect is greatly facilitated by exposure to the light, and the production of animalcules in infusions of organic substances is materially hastened by exposure, or retarded by exclusion from, the light.* It has been stated, and I


* It is for this reason that cisterns containing water for domestic use should always be covered. One of the pro-

am prepared to believe, with truth, that the wretched occupants of certain dark and gloomy vaults in one of the continental cities were notorious for the number of diseased and *deformed* children in their families, and were removed thence by authority on that account.

Humboldt has made the observation that he never saw a deformed or ill-made Indian, a result which he ascribes to the full exposure of the body to the sunlight. And others have observed that there is an unusual tendency to deformity among persons brought up in cellars or mines, or in dark and narrow streets. Linnaeus remarks, in his account of his journey to Lapland, that the continual exposure to solar light was probably one of the causes that rendered a summer's journey through high northern latitudes so peculiarly healthful and invigorating.

The influence of light in promoting recovery from disease, will probably ultimately become more a subject deemed worthy the attention of the medical practitioner than it would appear to be at present. It is related of Dupuytren, that one of his patients

visions of the Bill for the Water Supply of the Metropolis, demands the exclusion of the water in the reservoir from the light.



ad been deemed incurable by many eminent practitioners in Paris. This lady resided in a dark room, into which the sun never shone, in one of the tall narrow streets of that city. After a careful examination of her case, Dupuytren was led to refer her complaints to the absence of light, and directed her removal to a more exposed situation. In a little while she perfectly recovered. Instances have occurred within my own knowledge in which a somewhat similar exclusion from light has been attended with the worst results. It has been found, after careful observations, that different sides of the same building differ in their influence on health. Thus in a military hospital at St. Petersburg the cases of disease were constantly as three to one on the dark side compared with the bright side of the edifice. And it has been observed that in one of the London hospitals, with a long range of frontage looking nearly due north and south, it was found that residence in the south wards is much more conducive to the welfare of the patients than in those on the north side of the building. I may remark, in bringing to a close this condensed view of the evidences in support of the position advanced, that it deserves enquiry whether the comparative immunity enjoyed by sailors over soldiers from pulmonary tubercles

may not be in part due to the exposure of the former to the light, and particularly of the chest?

From what has been said on the effect of light upon the development of animals, it will be evident that in the case of children, whose whole phase of existence is one of unceasing development, this influence must be considerable, and that it is most important it should be thoroughly recognised. I cannot imagine a greater contrast of vital condition than that presented by a group of village children, even of the humblest parents, and a group of children taken from one of the thousand dark courts of the great metropolis. The vigour of limb and degree of robust beauty presented by the former would, when contrasted with the slender forms and pallid aspect of the latter, speak to the existence of a quickening influence of no insignificant power in the bright light to which the former were exposed. The development of the former takes place under every condition calculated to promote its due progress, while that of the latter must struggle under every disadvantage which can be opposed to it, and perhaps scarcely one so prominently as want of light. The sports and exercises of a child in the country, as in the city, are essentially out-of-door; but how different the condition of their playground! The one may roam the

fields, or spend hours in the sunshine along the high-road ; but the only place free to the latter is the wretched court or street in which its home lies, where the sun's rays scarcely ever penetrate.

After much reflection on this subject, the conviction is deeply impressed upon me, that during the whole period of childhood the absence of a full exposure to solar influence is one of the great evils of residence in towns. I am repeatedly in the habit of directing invalid children to spend hours in the sunshine, when the heat is not excessive ; and although I would not lose sight of the fact that fresh air is of yet greater importance to them, I feel justified in believing that to the stimulation of the solar ray the benefits may be in part ascribed. The want of light is not confined to the children of the poor and destitute growing up in the gloom and wretchedness of their dark homes ; invalid children of the wealthier classes are often much neglected in this respect, are kept in darkened rooms, and are taken out for the air in close and covered vehicles. To place such a child on a thick broad carpet spread on the grass, and there to permit it to play in the full sunshine, except in the very height of summer, would prove to be a far more speedy means of restoring strength and vigour to its bodily powers.

I must, however, caution the reader that the influence of light is so highly stimulating in cases of actual inflammatory disease, and in certain irritable conditions of the child's system, that to expose it to a bright light would, probably, prove in a high degree injurious. And in every instance care should be taken to protect a child from the sun's rays when very intense : in such cases the hours before and after mid-day are alone suitable for its exercise in the open air. In all cases where there are indications of cerebral irritation, the stimulation of light requires the same precautions as are demanded for its exposure to the air, when the lungs are known to be in a delicate state. The irritation of a draught of cold air to a child in the latter state is not more dangerous than its exposure to the burning rays of the sun in the former. Physicians who have paid much attention to the diseases of children fully recognise the stimulating influences not merely of sunlight but of ordinary daylight, when they give, as they are wont to do, instructions—often too little regarded—to darken and cool the sick chamber.

Enough has now been advanced to show that there are good reasons for believing that a want of exposure to light is a source of much evil to children, in all probability disposing to early disease, and interfering

with their development and well-being in a very marked and unquestionable manner. The removal of this evil in great towns appears hopeless, since it has been perpetuated in a lasting manner by the results of the baneful window tax. But since this dangerous and fatal act of legislation has been repealed, it may be hoped that in constructing dwellings for the poor an abundance of light may be considered as a requisite not less essential than abundance of air for respiration. Much may also be done by instructing the poor in the benefits of a well-lighted and clean apartment, and particularly in procuring the whitewashing of their rooms, by which not only is organic matter destroyed, but an excellent reflecting surface for white light is produced. Those who are much among the habitations of the poor will do a lasting benefit to their children if they will constantly urge the importance of giving them all the air and sunshine possible.

So little has generally been said on this subject, that probably few readers of this volume are prepared to follow me as far as I have ventured to tread in its exposition. Under a real conviction, however, of the entire truth of the general proposition laid down as to the influence of light upon children, I have felt it a duty not to hesitate at making a com-

plete avowal of what I deem to be important principles in their medical and domestic history; and as our knowledge of the influences of the sunbeam upon all nature is extended, I look forward with confidence to a universal recognition of what has here been put forward.

It will not be so necessary to urge the importance of free air to a healthy condition in children, as it has been in the case of light, from the fact that it is now almost universally believed. But it may be very properly questioned whether, with the fullest knowledge on the subject, our social condition has as yet derived much benefit from its recognition. It is almost superfluous to state that a continued supply of pure and fresh air, in sufficient quantity, is necessary to health in the adult; but it is much more essential in the child. The function of respiration is one of those which is carried on with pre-eminent vigour and activity in a child,—the frequency of the breathing and the rate of the pulse being much greater than in the adult, and the lungs themselves pervious to their remotest portions to the air. This function is the great supporter and producer of the chemical changes which are in continual progress in the body, and if improperly fulfilled, every other must suffer in proportion. It will, therefore, be easily under-

stood, that if to the active lungs of a child the sole medium of respiration offered be one of an impure kind, the result must be very prejudicial.

In order rightly to understand this subject, it is important to have a clear possession of the facts of the case. I consider it of great consequence to show that that defect in the air of a room in which a child may spend many hours of its life does not consist so much in a want of the chemical principles necessary to respiration, as in the addition of other and obnoxious ingredients to the air. It is a very prevalent error even among well-informed members of the medical profession, to consider that the great defect of the air of our apartments lies in its containing less oxygen than that of the atmosphere in its normal state. Very careful researches have been made into this subject by M. Leblanc, with a result entirely opposite to this very natural supposition. It has been shown that the air of apartments differs scarcely at all in its proportions of oxygen and nitrogen from that of the general atmosphere. The bad effects of respiring such air continually are consequently not to be attributed to a want of this important element, but to some other cause.

The only addition to the air of dwelling-houses which chemical analysis has rendered appreciable is

the presence of a small proportion of carbonic acid in excess over that always present in air, wheresoever it is examined. It is well known that this gas is very pernicious even when breathed in a diluted state, and it has been consequently repeatedly stated, that it is to its greater presence in the air of dwellings that such air is unhealthy for respiration. This I believe to be a mistake not less capable of distinct demonstration than the preceding. It is certain, in the first place, that the addition is very minute, and often scarcely perceptible by analysis; and it has been shown that where the gas is really present constantly in minute quantities, it produces but a slight effect on health. After careful inquiry into this subject, it appears to me that the addition of the very minute portion of carbonic acid, arising from respiration and combustion, is a far less serious adulteration of the air of our dwellings than certain other ingredients, which have escaped the distinct perception of the analytical chemist.

The atmosphere of every house is, to a greater or less extent, charged with organic matter. One ever-active source of this impurity is the function of respiration. If the air of the lungs be expelled through concentrated sulphuric acid by a glass tube dipping into it, the liquid will indicate by its change from a

colourless state to a red tint that organic matter is passing through it, and is decomposed in the act. The following extract from a work on the chemistry of the created world, gives some additional information on this subject :—By passing the air of a house through water for three months, an eminent chemist, who minutely examined this subject, was able to detect a certain amount of chemical matter in the air. A part of this was sulphuric acid, with some chlorine, and an organic substance resembling impure albumen. Such matters are constantly being poured into the air partly from the lungs of men and animals, and from manufacturing processes. On these substances becoming condensed upon cold bodies and in a warm atmosphere, the albuminous matter very soon putrifies and emits disagreeable odours. The oxygen of the atmosphere acts upon it, and it gives rise in its decomposition to carbonic acid, ammonia, sulphuretted hydrogen, and probably other gases. The matter condensing on cold walls in crowded assembly rooms may be collected by means of a little tube, called a pipette. If allowed to stand it thickens, and on examination under the microscope is found to contain numbers of minute *confervæ*, between the stalks of which a number of greenish globules are seen constantly moving about, accompanied by still more

minute animated particles, presenting a very interesting and beautiful spectacle. If this animal exhalation is allowed to accumulate on various objects, by its frequent condensation on their surface, and subsequent drying up, it forms a gummy organic plaster, which may often be found upon the neglected furniture of dirty houses. In moist weather it decomposes, and produces that peculiarly disagreeable organic smell which no words can describe, but which is only too familiar to our senses in the abodes of misery and poverty. In contrasting this condensed animal exhalation with dew collected in the open air, the most remarkable difference is found to exist. The dew remained beautifully clear and limpid, even when boiled down; the odour was not remarkable; and when the small portion of solid matter which remained dissolved in it was exposed to heat, the smell was that of vegetable matter, with very little trace of any nitrogenised substance. It was also rather agreeable than otherwise.

From these researches it is quite manifest that organic matters are always present in the air of towns. Occasionally, in close unhealthy neighbourhoods, it may even be perceived by the sense of smell.

But an almost equally prolific source of organic impurities in the air of dwellings accrues from cuta-

neous exhalations. The clothes of poor children are frequently thoroughly impregnated with organic matter from this source, which rapidly runs into a state of putrefactive decomposition. It has appeared to me that I have been able to recognise the acetate and probably the lactate of ammonia, in the apartments of the poor.

Let it be remembered in addition that those mysterious particles which constitute the germs of contagious disease are always floating in the air, and occasionally acquire an intensity of force which makes them destructively active, and we shall have a not imperfect idea of the disadvantages under which children placed in the full sphere of these causes have to struggle. We shall cease to wonder that the town is so much more fatal than the country, and that more than every third grave opened is for a little child.

The best evidence in support of the opinion thus advanced that want of a pure air, free from organic impregnation, is a powerful cause disposing to disease in children, and particularly in those resident in large towns, is derivable from statistical returns. It has been shown that the deaths at all ages from diseases of the respiratory organs are as 50,609 for the town districts to 21,966 for the country, a result which

indicates in a very striking manner the comparative insalubrity of the air respired. From evidence given before a Parliamentary Commission, it has been stated that many of the diseases of debility of children and young persons are a direct result of the vitiated condition of the air they were compelled habitually to respire. One of the medical witnesses states that the defective ventilation of the rooms and dwellings of the poor would appear to be the principal cause of the scrofulous affections which abound to an enormous extent among the patients at metropolitan dispensaries. The development of scrofula, it is further urged, is produced by the respiration, more or less prolonged, of air which is not sufficiently freshened. The dreadful condition of many of the poorer classes in respect of their accommodation for living and sleeping may be estimated from the fact, that in one large town alone upwards of twenty-two thousand human beings spend their wretched periods of brief existence, diseased and degraded, in cellars !

Children are the early sufferers in these cases. In one school in Manchester seventy per cent. of the infants living in cellars are always absent from sickness ; in another rather more than twenty-seven per cent. of the cellar occupants are absent from sickness : and that this is due to the nature of their abode is

shown by the fact that very little more than three per cent. of those who live in houses are absent from the same cause. To how great an extent want of light contributes, with want of pure air, to the production of this state of things, has not been ascertained; but its absence is no doubt severely felt.

The diseases induced by want of light and air are the more dangerous and intractable, from the very fact that their progress is slow and their character chronic. If bad ventilation and closed windows produced an attack of acute pneumonia, the evil would be at once perceptible, and the disease would be amenable to proper treatment. But when after months of the inhalation of animalised air, and of obscuration of the wasting frame from the light, the little patient is presented to the practitioner with every symptom of the full development of scrofulous disease, how little hope of ultimate recovery does the most enlightened method of treatment hold out!

There is only too much reason to believe that the evils we have been considering are not limited to the poorer classes, and that a disregard of the importance of pure light and pure air contributes to swell the list of feeble children among those who are

possessed of every facility for obtaining an opposite state of things. In these instances it should be merely necessary to state the great importance of attention to these points in the management of children. But for the poor something might be effectually done in many instances for their relief and for that of their pitiable and feeble offspring. The periodical limewashing of their rooms, the due repair of windows, and the insertion of a small pane of perforated zinc in the window, and another in the chimney flue near the ceiling, would, under proper management, be a simple and inexpensive means of saving many precious lives, and of obviating a fearful amount of disease and of physical and moral degradation. It were to be wished that those benevolent societies, who expend large sums in the erection of model dwellings, would entertain the question whether more permanent good might not be effected by employing the same means in bettering the condition of the almost countless dwellings of the poor. That association which had for its objects the supplying every landing in the populous houses of the poor of the metropolis with water and a waste-pipe, which would twice or thrice yearly cleanse the walls and ceiling, and look to the windows and drains, would, even in a limited sphere of operation, be

productive of much good, and prove one of the most powerful means in the moral elevation of those reached by its merciful influence. From a careful examination of statistical evidence, it has been stated by authority that in the county of Lancashire alone, 14,000 deaths and 398,000 cases of sickness might be prevented every year by thorough sanitary measures; and the actual pecuniary burden borne by the community in the support of removable disease and death, in this county alone, may be estimated at the annual sum of five millions of pounds sterling.*

Much instruction is often derivable from a comparison of disease as it exists in the human body, and as found in the vegetable world. If it has appeared, from what has been stated, that want of light and air lead to disease in man, the condition of a plant, similarly placed, indicates the same result. In vain does the florist seek to cultivate tender plants in large towns; the polluted air and the gloomy condition of the sky forbid its due development. The plant ceases to thrive as it used to do when in the country; it becomes diseased, in fact, and in its debilitated state insects and parasitic growths form

* Report of Health of Towns' Commission.

upon it, and in spite of the most solicitous attention, it withers and dies. We have here a precise analogue of the condition of many unfortunate children, doomed to wither and perish almost in a similar manner, and from similar causes. In its debilitated state the plant was unable to resist the invasion of disease,—and the same is also true of the child.

Want of light and air, combined with deprivation of the other necessities of life, alluded to in the preceding chapter, are depressants. They dispose to disease by lowering the force of vitality in the body of a child. They have also a tendency naturally to produce disease by their influence on the condition of the blood. A child poorly nourished, badly clothed, and little out in the air and light, is not merely weaker and thinner than a child ought to be in health, but it acquires a tendency to disease from the fact that the blood is found to deposit matter in a badly-organized condition, unfitted to repair waste, and calculated to become the seat of future mischief. This adds a new and powerful element of danger to the child, beyond and more formidable than that offered by pure debility. Children, therefore, in such a condition have to contend with two kinds of opposition to their physical progress; they are weakened, and therefore easily fall victims to disease from

without. But they are also impoverished of blood, and thus liable to far more formidable and insidious diseases from within.

It may be said that the agencies to which I have given so much consideration are equally obnoxious to health and existence in more mature life as in its early stages. To a certain extent this is true, since none can be deprived in any degree of what are essential to healthy existence without suffering in the result. But the evils of every class which have been here spoken of are of manifold more power over the constitution of a little child than over that of an adult, whose vitality is more intense and enduring, and better capable of resisting external injuries. I have seen children pining and dying under circumstances which have produced very little sensible effect on the health of their parents. But it is, perhaps, useless elevating the character of such an objection by applying to it all the force of contrary argument which the subject is capable of admitting. It will, I think, be admitted by any reflective person, that the tenderness and constitutional feebleness of the whole period of childhood cannot fail to render it a time when adverse circumstances will fall with greater force than at maturity. A sharp wind will often cut down a seedling plant, while it sweeps through the

branches of a tree without injury to a leaf; and the comparative resistance of a child and its parent are not unsimilar.

The attention of the reader has been hitherto occupied almost exclusively with those circumstances tending to produce disease and death which were of an external character. And these are undoubtedly the most important in one respect, since they admit of amelioration or removal. But, it has just been remarked, that which gives force to these circumstances in childhood especially, is the feeble resistance they encounter in the person of the child itself. The whole period of childhood may be characterized as one of great susceptibility. Disease, feebly resisted, is quickly in possession of the body of a child. This is a fact inseparable from its history. It is exposed to many perils, and to these is superadded that of a low power of overcoming them. This evil, it will be perceived, lies in the child itself; it is a part of its physiological condition.

In addition, however, to this source of danger, is one of much interest, and equally a subject of physiological study with the last. The period of childhood has been already stated to be one of continued development. It will be found that this circumstance, in conjunction with the last, gives a deter-

mining influence to the seat, character, and even type of children's diseases.

Another cause disposing to disease in early life, will be found in the fact that a new mode of existence is commenced when an infant enters on its career. Its nutrition flows from a new source, and this quickly liable to undergo disturbance, and as the result to the child disease may arise and attain a very formidable character. And again this function has to undergo an important change in a few months after its first establishment, when the infant ceases to be further directly dependent in any degree upon its parent, and thenceforth becomes for ever separated, and, as it were, individualized.

It is very necessary, when alluding to these constitutional predispositions, or, to use a less objectionable term, liabilities to disorder, that it should be fully understood that with healthy parents and healthy children—that is to say, in a perfectly natural state of things—every event in the parent's history and in that of her tender offspring, has been so beautifully arranged and adapted, that the successive periods of infancy, and subsequently of childhood, are passed without danger, and with very little disturbance of health—from these causes at least. The care of an all-wise Creator is abundantly manifested in this

arrangement. But with the institution and usages of civilized life perils have been artificially introduced into a time of unavoidable feebleness, and as the result the epoch of childhood is surrounded with dangers, to which it had not otherwise been exposed.

It is both interesting and instructive to trace the history of an infant from its birth onwards, and in so doing to mark the various dangers through which it has to pass, as they are produced in them by causes affecting its nutrition or its development. The first great cause of infantile disease and disturbance has been already adverted to in the injudicious arrangements of the lying-in chamber, a part of which invariably includes the administration of some improper kind of food or other, not long after the feeble infant has breathed its first gasp of our atmosphere. To this in due time succeeds the maternal bosom, the only legitimate source of food to the new-born child. One of the very first diseases of infancy now depends for its development upon the condition of the milk, or the introduction in addition to it of some unsuitable food. The infant's earliest ailment is disorder of the digestive apparatus. Frequently two or three days scarcely elapse before the medical practitioner's attention is requested to the baby, whose white mouth and lips very plainly indicate the exist-

ence of the malady in question. The infant may and generally does entirely get the better of this local ailment if due attention is given to its producing causes; but the latter, including as they generally do when a fatal result takes place, serious constitutional disease, are fatal to thousands of infants, and more particularly among those brought up by hand or in foundling institutions.

The condition of the stomach in an infant at birth deserves attention, since it differs in important respects from that of the adult. The form of this organ is at the period in question less curved and elongated, approaching to that recognised as peculiar to carnivorous animals. It is a form adapted to receive small portions of very nutrient food, and to part quickly with them. The muscular structure of the stomach is also very faintly developed. From these circumstances it is evident that the infant's food must be adapted to the capabilities of its digestive apparatus; and we are furnished with an easy clue to the causes of those diseases which arise from improper food. It is consequently important to remember that in this respect a cause disposing to disease is to be found in the physiological condition of the infant at birth. The difficulty and indeed impossibility of providing any equivalent for what is

naturally provided for food to the young child is thus explained, and it is easily understood why the majority of the early diseases of otherwise healthy children have their origin in the want of adaptation of artificial food to the condition of the organs of digestion, of which the stomach is only a part.

Tracing the infant's history onwards, if it passes safely through the dangerous period of the first month, every successive day gives additional hope of its final triumph over the opposing conditions with which every human being has to contend in passing from the cradle to maturity. The rapidity with which the danger declines after this period is one of the most remarkable circumstances in the child's history. The whole period of childhood is one of development, as has already been more than once observed. But if there be any time in which this peculiarity is most strikingly manifested, it is between birth and the second year. The teeth are developed; the brain increases with extraordinary and afterwards unparalleled activity; the digestive apparatus becomes more complicated; the hair is fully developed; the limbs and body are elongated, enlarged, and finally capable of individual exertion and locomotion; the mental faculties, dormant in the babe, acquire astonishing powers; memory,

thought, the process of reasoning, the power of speech, are in succession obtained ; and between the second and third year the child is to childhood what the youth is to manhood.

All this vital activity is attended with danger to the wonderful being in whom it is proceeding ; to how great an extent may be most accurately learned from the tables of fatal causes at this period. And although the safe passage from one month to another gives hope, and indeed assurance, in some degree, that all will be securely gone through, the numerous examples to the contrary sufficiently indicate the peril, and also point out the causes. The rapid development of the nervous system,—and particularly of the brain,—with its peculiar condition in the infant,* render it probable that we should find diseases connected with this part of the child's organization most frequent and most fatal in infancy. The mortality tables show the entire correctness of this view, as the following list, compiled from official returns, will immediately show :—

* Allusion is here made to the remarkable variations to which the cerebral circulation is subject, and the predominance of the spinal over the cerebral part of this system.

CHILDREN DYING in the METROPOLIS in 1842.

Diseases.	Ages.		
	0-1	1-3	3-5
Epidemics, &c. (Zymotic Class) . .	820	1285	592
Diseases of Nervous System . . .	1342	626	202
Diseases of Respiratory System . .	928	966	259
Diseases of Digestive Organs . . .	439	383	57

It will be remarked from this table that diseases of the nervous system and of the digestive organs are most fatal in the first year. In the second and up to the third year, more children die of epidemics and of diseases of the lungs; and the same rule obtains also for the third and up to the fifth year. Out of the sum set down to diseases of the nervous system, for the first year, 1,342, the enormous proportion of 1,013 infants perished of convulsions, and 236 of hydrocephalus, popularly called water in the brain.

More children die of hooping cough under the fifth year than of any other disease of the zymotic class. Next to this, in the order of fatality, is measles, then scarlatina, then croup, and after that small-pox; yet many parents would reverse the order here unquestionably displayed, and very few could be persuaded that hooping-cough destroys more

children under the fifth year than measles and small-pox together !

More children die of pneumonia than of any other disease of the lungs, and next to this of phthisis, or consumption, which is extremely fatal under the third year.

Of diseases of the digestive organs, more children perish during dentition, from the irritation consequent upon that process, than from any other cause ; and this is most fatal between the first and third year.

These circumstances are all, more or less, capable of explanation, linked as they are with certain peculiarities of physiological condition in the history of the child. How important is their aspect to the medical practitioner, nor less so to the anxious parent ! To the one they indicate the quarter from whence danger may be expected to arise,—to the other the care necessary for its obviation at this eventful epoch in the life of a child.

Had I not considered that the subjects treated of in the preceding pages—and discussed in a manner much less elaborate and complete than I could have desired—were fruitful in practical application, I should have hesitated at permitting them to occupy such a share of my work as I have allotted to them. The assent of every intelligent reader will probably

go with me when I express my conviction that a right understanding of principles of action is necessary to a right performance of duties. All truly valuable advice is based upon due recognition of the whole features of the subject advised upon. Under this conviction I have sought to exhibit the perils which, from without and from within, attend a little child's path from infancy to childhood and youth. Not indeed with a view either of exciting unreasoning wonder, or causeless alarm, but in order to render the parental, domestic, and medical management of these beings the subject of intelligent and careful thought and successful practice.

CHAPTER V.

ON THE HEALTHY MANAGEMENT OF THE INFANT.

I CAN, perhaps, scarcely commence this portion of my subject in a more appropriate manner, than by quoting the arch and pungent aphorisms of the author of "How to make Home Unhealthy :"—" In laying a foundation of ill-health it is a great point to be able to begin at the beginning. You have the future man at excellent advantage when he is between your fingers as a baby. Now, I will tell you how to treat the future pale-face at his first entrance into life. A little while before the birth of any child, have a little something ready in a spoon ; and, after birth, be ready at the first opportunity to thrust this down his throat. Let his first gift from

* Originally contributed to the 'Examiner,' these papers have been since collected and cheaply issued by Messrs. Chapman and Hall.

his fellow-creatures be a dose of physic: honey and calomel, or something of that kind; but you had better ask the nurse for a prescription. Have ready, also, before birth, an abundant stock of pins; for it is a great point, in putting the first dress upon the little naked body, to contrive that it shall contain as many pins as possible. The prick of a sly pin is excellent for making children cry; and, since it may lead nurses, mothers, and now and then even doctors, to administer physic for the cure of imaginary gripings in the bowels, it may be twice blessed. Sanitary enthusiasts are apt to say, that strings, not pins, are the right fastening for infants' clothes. Be not misled. Is not the pin-cushion an ancient institution? What is to say, 'Welcome, little stranger,' if pins cease to do so? Resist this innovation. The next thing that a child would do, if left alone, would be to sleep. I would not suffer that. The poor thing must want feeding; therefore waken it, and make it eat a sop, for that would be a pleasant joke at the expense of nature. It will be like wakening up a gentleman after midnight to put into his mouth some pickled herring; only the baby cannot thank you for your kindness as the gentleman might do."

In these sharp passages truly excellent advice is

contained, or rather suggested, and it were to be desired that less occasion for it existed. The same writer remarks: "How can a boy, not predisposed that way, hope to grow up consumptive, if some pains are not taken with him in his childhood?" Implied in this, in fact, lies the whole secret of the due and healthful management of children. The human being is the only one upon whom, in infancy, extraordinary pains are bestowed, the whole tendency of which is in opposition to the dictates of nature. Which of the lower animals is thus treated, even when in a state of domestication? Acting on the wise principle that natural laws have duly provided for their safety and well-being, the new-born creatures are not, at the moment of their birth, made the victims of artificial rules; and it is particularly deserving of remark, that early mortality is almost unknown among these creatures. Who ever found a dead suckling, which had perished from any other causes than accidental ones? Alas! out of which of the populous tenements of the poor of this metropolis has there never gone a child's funeral?

The observations to be made in this chapter are proposed to be confined to a few practical applications of principles already indicated in the preceding pages. The great object of all proper

management of children is to put them, from the first, as nearly as possible in a condition of nature. It was never intended that babies' heads should be rubbed with brandy, their mouths filled with sugar and butter, followed by gruel flavoured with cordials, and that their first acquaintance with the doctor should be in the form of a dose of castor oil. These things are so plainly contrary to common sense, that it is only to be regretted they are so extensively practised and believed in as indispensable prerequisites to health in infancy and childhood. Truly it is a suffering world, sorrowful and painful at the best, into which a child is born; and early is its acquaintance with grief and physical evil.

But, on the other hand, it was never intended that the valuable and tender life of a human infant was to be imperilled by that mimicry of natural conditions which has now and then characterized the proceedings of certain learned persons.* Achilles, when an infant, must have had a strong constitution, otherwise his dipping into cold water would have been followed by his speedy dissolution. And the same

* "Mr. Locke," observes an old writer on midwifery, "advises that a child should wear thin shoes and get wet feet, that he may become hardy."

must be said of every Spartan who survived the process of refrigeration recommended by the nurses, and, it may be, by the physicians of that day. Had the destiny of man been to continue in the state of barbarism, his state of infancy would have been very different. As an infant, he could have borne with impunity cold and heat, wet and dry, and external vicissitudes of all kinds, with the mere protection of his untutored parent. But, as he is the possessor of an immortal spirit—of the noblest faculties, and the most exalted hopes—his condition as an infant is wisely made one of feebleness and of absolute dependence. The young of no animate being is so helpless, and so tenderly constituted, as the human infant. He is a creature, every moment of whose early existence requires watchfulness and care, and is long linked to his parent by a tie which nature has itself enforced.

From neglect or abuses of this nature the infant may perish. But so also may its existence be rendered short in duration, and miserable in its conditions, by too much care. We cannot improve upon nature in any merely natural process. We may frustrate natural tendencies, and go beyond natural indications, but we shall have to regret the result. The early physical education of an infant is altogether a

natural process. The relation of an infant is to its mother only, not to doctors and nurses. What has a new-born babe to do with these? It were well for the infant if it were oftener found at first—where it is found too often improperly afterwards—in the bosom of the mother, rather than in the lap of the nurse. If parents would have their children brought up as they were really intended to be, saved from early dangers, and possessed of vigorous life, let them look well to the appointments of the chamber of birth. There, in the hands of too often an untaught and prejudiced woman, lies their tender child, to be fed and physicked, dieted and cordialled, at her sole discretion; while the affectionate parent lies, often, in vain, requesting that the babe should be laid in her arms, and nourished by herself alone. It is deserving of much thought, that it is during the first month that the mortality of children reaches a height unparalleled in their after-life. How important then this epoch, and how necessary that the feebly-burning taper of life just lit should be gently and intelligently watched, lest some rude accident should for ever extinguish it!

It will be very properly considered altogether superfluous that the writer should give instructions in the proper dressing and washing of a new-born

infant. The occasion sometimes indeed presents itself, when it may be found that to know somewhat even of these details, in the event of sudden emergencies, forms a very useful part of the universal knowledge supposed to be possessed by every medical practitioner. But, as the ordinary practice of the nurse presents no very violent opposition to proper principles, it is unnecessary to enter into these points.

Certain fundamental principles of management should, however, be kept in clear view from the very first; and the practical application of these may be safely left to the anxious and intelligent parent. Too much importance can scarcely be attached to the necessity for absolute and perfect cleanliness from the first. Mothers ought to be informed that the new-born infant is always enveloped in a covering of fatty matter, which is not very easily removed. The first washing has for its principal object the entire removal of this covering, and, as a secondary one, that of removing the stains of the fluids accompanying the expulsion of the infant. To remove the fatty covering should be most sedulously impressed on the nurse as a point of much importance. To do this effectually, tenderly, and quickly, is to accomplish a very great step in

securing the health of the infant. Infinite trouble will attend neglect of this point. The folds of the skin are those places generally passed over, and the excoriations resulting from this want of proper ablution are very troublesome and painful. I am convinced, after a careful examination of numbers of new-born infants, that not one in ten is ever thoroughly cleaned at the first from this adhesive matter. Some of the repeated cases of inflammation of the eyes of infants, witnessed daily in accoucheur practice, have, I am persuaded, their origin in the neglect of a thorough removal of this covering, and of the irritating secretions which may have accidentally dropped into them immediately after delivery. I would urge every expectant mother to be most particular in impressing her nurse with this first principle in her treatment of the future object of her care.

I am thus particular in insisting upon perfect cleanliness in the new-born infant for the following great physiological reason. The tender skin of an infant is a great respiring surface. The child—equally, indeed, with the adult—breathes not only by the lungs, but by every point of skin all over its body. Obviously, it is of great moment to render this function healthy and fully established from the first,

especially as the pulmonary respiration is often very languid and imperfect in the newly born. Nothing can be conceived as better calculated to impede such a function as the fatty covering of which I have spoken. The infant is sometimes so thoroughly protected by it that, if left unremoved, it is difficult to conceive of cutaneous respiration going on at all.

It must not, however, be forgotten that the skin of an infant is very susceptible to harsh usage; but the necessary ablutory operations of the nurse need not be rough and clumsy. For this, and for many additional reasons, a middle-aged person is preferable to an "old and experienced" nurse; for the hands of the former are more facile in manipulation, and softer than those of the latter. But every injunction should be given to get through the whole process of washing and dressing with the utmost possible rapidity. How often has the medical attendant seen the infant shivering and sneezing in the nurse's lap, when as yet scarcely possessed of half an hour of life-time!

If a remark be necessary as to infants' first clothing, I may hazard the expression of my dissent from the advisability of those traditionally-shaped dresses which expose the upper part of the chest and the neck of the infant to the air. These dresses

must, I should presume, be popularly deemed becoming to the infant; but this can be their only recommendation. The most delicate and frequently diseased part of both lungs lies immediately beneath the portions of the infant's chest thus denuded; and nothing can be more likely to prolong a condition of imperfect expansion of the lungs after birth, than to lay this part of the body bare to the chilling influence of a temperature always much below that of the body. It were to be wished that the whole of the first clothing of a new-born infant were generally made either of fine, soft, new flannel, or of very soft cotton cloth. It seems to me, that to put a shirt, even of the very softest cambric or finest linen (which are both rapid conductors of heat), next the skin of an infant, on its first being enveloped in clothes, is as premature and untimely as to put a child of five years old into the habiliments proper to youth. Much difficulty must, however, be anticipated if we hope to render these doctrines universally acceptable. I have, however, been unwittingly led into the rightful domain of the nurse, and, on retiring to legitimate ground, would only observe that, minor as these points may appear, they have relation to very important features in the physiological condition of a new-born infant.

The next point of importance, equal even to that of cleanliness and proper clothing, is the due maintenance of the infant's temperature. I have already expressed my conviction of the evils which result from neglect of this subject. It has been shown that, of all animate creatures, the young of the human species is the least fitted to endure early separation from its parent, in consequence of its feeble power of sustaining its temperature. Yet the newborn infant is rarely to be found by its mother's side, but is generally placed, wrapped in flannels, on a pillow, or is displayed to wondering friends in the nurse's arms, or on her lap. The young of no other warm-blooded species is thus separated from the person of the parent. On the contrary, the position of all newly-born creatures is immediately under or near to the body of the mother. This is really an important consideration, as will appear from what follows.

It has been before observed, that an infant has only one source of animal heat, which is the function of respiration. But it has also been stated that, very generally, this function is extremely imperfectly fulfilled at, and soon after, birth, even for some days. Hence the coldness of the hands and cheek of an infant. If the infant is at this time left

to itself, however thick its envelope of flannels, its temperature is not fully sustained by its own arrangements for animal heat. It requires an additional supply beyond that produced by its own functions. The nurse will, very probably, now and then give her tender charge something little short of a roasting before the bedroom fire. But the result is not of the kind desired. The child is not the warmer afterwards for a temporary increase of heat from the fire. The only proper source of heat is the mother; and, unless other circumstances forbid it, the infant ought, as soon as the necessary arrangements of the bed have been made, to be laid in its mother's bosom. Unless the mother be too feeble and exhausted, this is the only proper place for her infant; as, I doubt not, it will be that most acceptable and grateful to herself.

Since it is generally undesirable to have the temperature of the lying-in apartment raised beyond the ordinary standard, I would urge, and generally direct the infant to be washed and dressed in an adjoining room, where, for the first few days, a good fire should be kept, and the temperature not fall under 70° Fahr. A warm bath, of the temperature of 92° Fahr., is most proper for the morning and evening ablutions of the infant; and this tempera-

ture, or a degree or two higher, will be most agreeable to the child. It will be necessary, of course, so to arrange matters, by opening the door leading into the apartment of the mother, that a transition from a warm room to one not so warm will be effected without risk of taking cold. Many reasons make it desirable that all the tumult and excitement of washing and dressing the infant should be removed from the bedroom of the mother, whose newly-awakened anxieties are often provoked by slight and trivial accidents inseparable from these operations. After the lapse of four or five days, if the mother progresses favourably, the use of another room may be dispensed with, and the infant will bear, without injury, a temporary exposure to a cooler air. This will of course be gradually and judiciously effected. The operations of washing and dressing now become an object of pleasing interest to the parent, and disturb, in a not unsalutary manner, the still monotony of her bedroom. Minute details of this kind may almost provoke a smile; but the best general directions without sufficient detail are but mere finger-posts without inscriptions.

The food of a newly-born infant is, it is popularly supposed, a very perplexing question. This, at least, might be concluded from the elaborate disqui-

sitions it has provoked. The nurse generally decides these matters for herself, and proceeds in a summary manner to pour gruel, or some other compound, into the mouth of the baby. Such is the treatment it has to endure, until it is partly relieved from its miseries by the due appearance of the milk ; although, even then, it is often compelled to receive spoon food.

The interval elapsing between the birth of the infant and the appearance of the milk varies ; but it is generally toward the close of the third day that it first manifests itself. Not unfrequently, milk is secreted for some days before birth. The interval must, however, in the common belief, be occupied with feeding the infant. A moment's reflection will show that this is an entire violation of natural laws, and, like all such, it is fruitful in mischief to the infant. We should search in vain for an instance of the young of any mammiferous creature perishing, under ordinary circumstances, from lack of food. And it is irrational to suppose that the wants of the young of our own species were overlooked by Him who observes the fall of a sparrow. The supply of the milk is an arrangement expressly adapted for the infant's support. Now, to suppose this supply to be out of due time in arriving is as

absurd as to deny for whom it was intended. The wisdom which fitted it for the food of the infant also adapted and arranged the period of its appearance, otherwise the arrangement would be incomplete. It is remarkable how little this subject has been thought of, and how little in accordance with the principles it suggests are the practical arrangements of the lying-in room.

The supply of milk is, I am led to believe, often retarded unduly, by negligence in not applying the infant to the mother's breast. I am fully aware that women, living in the full refinement of civilized life, are often much fatigued and exhausted after the violent exertions and suffering attendant upon the birth of their offspring. A few hours' repose, and absolute quiescence, form a portion of the parting recommendations of every thoughtful practitioner on retiring from the apartment. But not less, apparently, is the infant wearied, by its treatment under the hands of the nurse, and falls into a gentle slumber for some hours. When the mother awakes, and has been duly arranged, then the infant should be at once applied to the breast. It is of no consequence that no milk is there. The act is alike beneficial to the mother and to her child. In the former, it has a remarkable effect in promoting the

due and complete contractions of the uterus, and in directing to the mammary glands that stream of blood from which the infant's best food is to be secreted. And the infant becomes in this way educated in the task it afterwards so well learns how to fulfil. Unless other circumstances forbid it, such as extreme exhaustion in the parent, the infant ought to be laid in her bosom in four or six hours after delivery. If this were done always, the arrival of the milk would, I am assured, be much hastened, and the necessity for giving any food to the infant might be entirely obviated.

It certainly does not reflect much credit upon the dietetics of the newly born that it has been found, as an invariable rule, that for two or three days after birth the infant decreases in weight. If we consider that the discharge of the fæcal matter, technically called the meconium, is compensated for by the weight of the food always given, then it shows absolutely that the waste of the body of the child is more rapid than its repair, and this is the best evidence of imperfect nutrition. This appears to show, in the most convincing manner, that the food given before the appearance of the milk does not really contribute anything of value to the child, and therefore might as well be dispensed with alto-

gether. It is, in fact, very certain, that now and then infants suffer no bad consequences from having to wait for two or three days until their proper food arrived; for such cases occasionally present themselves.

If food is to be given to the infant, and particularly if, from peculiar circumstances, the mother is unable to suckle, or the appearance of the milk be unusually prolonged, then it is important to select that which will be the least injurious to it, and the most nearly resembling the early condition of the human milk. An intelligent parent will soon be convinced of the dangerous folly of giving a newly-born infant gruel, or such like, on being informed of the nature of this secretion, and of its beautiful adaptation to the wants of her child. The first milk is remarkably different from that formed at a later period. On microscopic examination, it is found to consist of two portions—a thin watery fluid, and a multitude of yellow corpuscles suspended in it. These corpuscles, which are apparently made up of many small granules aggregated together, give to the first milk its peculiar character. It is called the colostrum. It abounds in fatty and saccharine matters, but contains only a small proportion of the nitrogenous element, the caseine, which afterwards

gradually increases in proportion to the requirements of the infant.

This fluid is admirably adapted for the infant's condition at birth; it is easily and rapidly digested, it contains no superfluous materials, and is adapted for early nutrition with very little further change. It is also valuable for its purgative influence on the child, which is such as to render, generally speaking, all dosings with castor-oil a needless infliction. Sometimes, indeed, the character of first milk is retained too long, and examination by the microscope will reveal to the medical practitioner,—who will find its aid very important in this, as in other investigations into the causes of disease,—the source of the consequent disturbance of the health of the infant. If such an aliment as this be nature's supply, how manifestly wrong must it be to give to an infant scarcely an hour old a single spoonful of the customary preparations of farinaceous matter and sugar!

Oatmeal, arrowroot, biscuit powder, “farinaceous food,” grated bread, and such like, are as a general rule to be expunged from the diet table of an infant. This kind of food requires a different form of digestive apparatus to that of a newly-born babe. It is the food of the graminivorous creatures, not of

carnivorous. But the child at birth belongs to the carnivorous creatures, notwithstanding that its food is fluid. All food of this nature is premature, is with difficulty digested, and is generally quite unsuitable for the tender stomach of an infant.

Since milk is the food which nature indicates, I believe there is no right substitute for it but milk. If asses' milk can be afforded, then that is the most appropriate for the newly born. It should not be administered by a spoon, but from a bottle, in the manner commonly practised. But if this is not procurable, then cows' milk must be used. At first, it must be diluted with an equal part of water, and a little sugar may be added. The milk generally sold in the metropolis is not suitable for the newly-born infant; nor, indeed, can it be regarded as an entirely wholesome article of general consumption. Its dilution is, of course, a matter of notoriety; but this is trivial in comparison with the evil attendant upon the vicious system of feeding the cows, and keeping them constantly in the heated and impure atmosphere of the stalls. Such milk quickly assumes an acid character, and, as the product of an unhealthy condition in the animal, is obviously little adapted to promote health in the child. Since the introduction of milk conveyed by railways, it is occasionally pos-

sible to obtain a good and pure fluid. But it is very important to inquire into its source, if the infant is to be entirely brought up artificially. In the metropolis, however, asses' milk can always be procured, and the medical practitioner can readily furnish his patients with the addresses of the persons who make a livelihood by keeping animals for this purpose. It is often advisable to add a little magnesia, or lime-water, to the milk of the cow, in correction of its accecent tendencies.

If it be considered desirable to give a newly-born infant a little food prior to the appearance of the milk, then let it suck from a bottle a little asses' milk or diluted cows' milk ; but all the farinaceous preparations are to be rejected. It is a very natural supposition that food of this kind is nutritious, for it is thick and pulpy, and does in reality contain a fair proportion of valuable material. But it is unsuitable for the infant's present condition, and although a child may become used to it, and its digestive apparatus even modified accordingly, it is so plainly an unnatural food as to be reprehensible on that if on no other consideration. Infants do not require thick food, since nature supplies them only with a moderately thin fluid for their support ; and many bad consequences to the child will result if the attempt

be persisted in to substitute an artificial for a natural system of feeding.

It is important that the food—and under this term I would only permit as a general rule asses' and cows' milk to be included—should always be as nearly the temperature of the human milk as possible. As this is directly derived at the time of suckling from the blood circulating in the mammary glands, it cannot be lower in temperature than about 95° or 96° Fahr., and all food artificially given must approach this heat as nearly as possible. The delicate condition of the new-born child's stomach renders it necessary to adopt every precaution to avoid causes of depression or irritation, and food at an improper temperature is very influential in either way.

From all that has been said in this work in the hope of procuring the substitution of a more natural arrangement than the present artificial and erroneous one, as practised in the apartment of the mother and her child, it will be evident that great, nay paramount importance, is to be attached to the expediency of the mother suckling her own child. The occasion must be rare, in actual fact, in which it is absolutely advisable that this duty should be transferred to another, or that the poor infant should be nurtured by hand. In the majority of these cases the symp-

toms of disease in the parent are such as to mark them out in the most clear and prominent manner, and not unfrequently nature enforces the separation of the infant from the mother's breast by withholding the secretion itself. I need not again reproduce the painful statements given in a preceding page as to the mortality ascribable to this cause alone, in order to enforce the duty on the attention of parents. Probably there are few mothers really averse to its fulfilment, and it can scarcely be supposed that any parent, if fully informed of the risk to which she by her own act would expose the future well-being of her infant, would hesitate at a cheerful accomplishment of a mother's first duty to her child. The unnatural cruelty of transferring a helpless infant to another, has often been the theme of writers on this point; but it has, perhaps, never occurred to them to inquire to how great an extent the mother was justified in this proceeding by the advice of her attendant. That mother must be, indeed, unnatural and cruel, and parental love must be little known to her, if, after a plain and explicit statement of the dangers of such a course, she could be found to renounce a duty which nature, experience, and the tender helplessness of her infant alike enjoin upon her.

If filial obedience and reverence be the inalienable right of a parent from her child, not less is direct maternal sustenance the right of a new-born infant ; and only the clearest indications of duty should influence a mother in deciding whether she would continue its support or not. Let the advice of her medical attendant be carefully sought and conscientiously carried out, for he alone is capable of pronouncing as to the expediency of the act ; and few medical practitioners could be found who, if required to give an unbiassed judgment, would hesitate for a moment in deciding whether the case was such as to justify the separation of the child or not. If the parent be healthy, and the milk appropriate to the child—exceptions of the latter kind occasionally presenting themselves—I am at a loss to conceive the existence of any circumstances sufficiently cogent to prevent maternal suckling. As regards the presumed claims of refined society upon the time of the parent interfering to prevent the exercise of this duty, the same might be urged with every duty equally sacred ; and the mother must be content to live for her acquaintances rather than for her own family and offspring.

Nothing but disease or extreme debility should prevent a mother from making the attempt, at least,

to suckle her own infant; and the sooner this can be done after recovering from the immediate exhaustion of delivery the better. There is often a little difficulty attendant upon the first institution of this function. The child may with difficulty apply itself to its task, or the nipple may be too little prominent. Generally, however, a little tact and patience soon subdue these obstacles. On the full establishment of the flow of milk, the tenderness of the bosom is often very great, and the act of suckling painful in the extreme. This, however, soon subsides under judicious management, and the mother for the first time experiences the solace and satisfaction of nurturing her own infant. It now becomes of importance to both the child and parent to observe a certain regularity in the period of suckling.

The sound advice which it suggests tempts me to make another extract from the little book* before quoted in this chapter:—"This is a golden rule concerning babies: to procure sickly growth, let the child always suckle. Attempt no regularity in nursing. It is true that if an infant be fed at the breast every four hours, it will fall into the habit of desiring food only so often, and will sleep very tranquilly during

* "How to make Home Unhealthy."

the interval. This may save trouble; but it is a device for rearing healthy children. We discard it. Our infants shall be nursed in no new-fangled way. As for the child's crying, quiet costs eighteenpence a bottle; so that argument is very soon disposed of." Truly this is the way to make the infant unhealthy and unhappy, and the more carefully the reverse of this advice is followed, the better for both child and parent. Intervals of two, three, or four hours, according to the state of the child, are adapted to its early condition. At a subsequent period the time may be somewhat more extended.

Instances not unfrequently occur in which the prolongation of suckling is rendered undesirable both for the child and parent. The milk of some women greatly diminishes in quantity, and that of others in quality, and ultimately, from one or other of these causes, they are compelled to desist from suckling their infants.* The actual period during which a mother, in either of these cases, can suckle her child, varies; but it is of great importance that the duty

* Some interesting experiments have been recently made, which would appear to show that a means of inducing a free and full secretion of milk, even after it has greatly diminished or prematurely disappeared, actually exists. Until now, the art of medicine has not succeeded in effecting this very desirable result by ordinary remedies.

should be fulfilled, even although it may have been the lesson taught by experience that it cannot be long persisted in. For the first few weeks at least most women can and ought to suckle their children, and only to desist from so doing upon competent advice. Even then the best course to adopt will be, whenever possible, to suckle the child occasionally in the day, and to supply it at other times with the best substitute that can be procured for the mother's milk. Nurses have, among other ideas, the absurd one that such a plan as this is wholly inadmissible, and that serious consequences ensue to the child from what is called mixing the milk. Judicious and careful management on the part of the medical attendant will thus, however, be often instrumental in enabling a delicate mother to nurse her child, without risk to her own health, for a sufficient period to secure to it some stability of constitution and vigour of body.

A painful affection of the nipples often interferes so much with suckling, that it becomes on this account alone absolutely necessary to wean the child in extreme cases. But these cases almost always yield to proper attention, if they are taken at an early stage; and I have seen much benefit result from the application of moderately astringent lotions for some months prior to delivery. The same applica-

tions are also constantly employed after birth. Much suffering may be obviated by directing the early attention of the medical man at once to the fissure in the skin when it appears, and also by constantly wearing a guard over the nipple, such as the shell of the limpet, to be placed over it immediately after suckling. The nipple is thus protected from movement and from pressure, and will often heal without further trouble. The application of collodion has appeared to me the most valuable of remedies for this complaint, and has been successful when other means have failed to give relief. Slight cases are cured almost immediately by it.

Perhaps there is no subject upon which a conscientious person feels more difficulty in giving advice than on the advisability of employing a wet nurse. It is at the best only a choice of evils. If the infant of the wet nurse be of an age sufficient to bear weaning without danger, then it unfortunately happens that her milk is not well suited to the support of a newly-born infant. If it is not, then the risk of suffering is only transferred, and the child of the poor parent suffers in the place of that of the wealthier one. If it be possible to avoid injury to the former, then it is fully justifiable to afford the healthful nourishment to the latter. It is certain, however,

that many poor infants pine and die from privation of breast-milk, and life must not be considered less precious in the poor than in the rich. Certain it is also that many children would inevitably perish unless the milk of a healthy wet-nurse be supplied to them; and the medical man, in estimating the moral as well as medical features of the case in which his advice is sought, will need the full exercise of that calm and careful judgment for which his profession eminently fits him. As the selection and employment of a wet-nurse is a matter which will always be referred to the medical attendant for his opinion, it is not necessary to make further allusion to it in this place.

In order to the healthy management of the infant, it is of the utmost consequence that the parent herself, while suckling, should attend to her own health. Since the infant is entirely dependent upon her, how urgent the necessity for the observance on her part of those plain and simple rules of self-management, which, when properly carried out, lead to the true physical well-being of both mother and child! In a few sentences may be set down all that is really essential to be attended to during lactation, as regards maternal management. For since any mother who reads these pages would, if anything unusual

presented itself, most properly seek the advice of her medical attendant, I deem it useless to offer instructions for such cases, the features of which vary in almost every instance,—and they are, consequently, such as to be little benefited by mere general remarks.

The whole period of pregnancy, and the succeeding one of lactation, are times of great vital activity. Careful researches have shown that during these periods there is a remarkable increase in the amount of carbon exhaled by the lungs, thus indicating the importance of attention to this function both before and after delivery. Exercise is consequently—since it is of all other actions the most effectual in promoting the function of respiration, and the resulting exhalation of carbon—necessary as well before as after the birth of the infant. Where it is practicable, walking moderately is the best kind of exercise for a nursing mother, as for the expectant parent.* In this manner the perfect aeration of the blood will

* All writers on regimen will agree with me when expressing my conviction, that very few women really take that amount of exercise which would be beneficial to them and their children. Of the many evils attendant upon civilized society, that of neglected exercise among women is one of the most general, and is to be the more deplored since its effects may extend even to their offspring.

be best accomplished, and the secretion it is to furnish will approach its healthiest state. It has been shown that exercise has a remarkable effect upon the milk in increasing the amount of its nitrogenous principle, caseine. At first the milk is more saccharine and oleaginous, and, by a nice adaptation, the circumstances attendant upon parturition confine the mother, and prevent her taking much exercise. But afterwards the caseine increases, and its increase is promoted by the returning power of exertion. Even did the debility resulting from her recent confinement not exist to prevent the mother taking much exercise at first, it would be undesirable for the infant's sake to do so. Afterwards, the amount should be gradually and judiciously augmented. Those women who reside in cities more require exercise than the residents in the country; for experience indicates an obstacle to healthy respiration in towns, which is not found in the country. The exercise to be commended is regular, sufficient, gentle, and within the limits of fatigue, in the open air, unless other causes forbid it. Care must be taken to avoid cold, as well as every other cause of constitutional derangement. The function of the skin should be promoted by entire ablution, followed by friction with a coarse towel. Let it never be forgotten that the skin is a

great exhalant organ, and most important assistant to the lungs.

Generally speaking, a simple diet is sufficient for the mother during lactation, and it need not vary greatly from that which she has found to be in conformity with a state of entire health previously. If those mothers who almost immediately after the birth of their infant adopt, without authority, an excessive animal diet, and accompany their food with stimulant liquids, would pause to ask how the same infants were nourished before birth upon their ordinary simple arrangements, some good result would surely ensue. A person who sought medical advice, once informed me that he partook largely of meat four or five times daily, that is to say, at every meal; but the health of this man suffered materially in consequence, and he was the reverse of a robust person. Some women during lactation commit the same error, and the result is undoubtedly similar. I now speak of women in health. When excessive quantities of meat, or the full supply of stimulants, are thought to be required for the mother, it were well for her to seek medical counsel, and to be guided in her dietetic arrangements by the advice given. Delicate women ought not to take their instructions from books or ignorant nurses on such subjects, and

no better counsel can be given to such than to urge them to ask assistance on this subject from those whose directions may be safely followed. What is popularly called "debility," is occasionally some form of disease; and if the so-called debility interferes with the function of lactation, it is a case requiring medical advice, and much suffering and anxiety may be avoided by early application for such aid. It cannot but be regarded as singular that women, who, when anything occurs to interfere with the menstrual function, seek early advice from their medical attendants, are less ready to direct his attention to the function in question, on the due fulfilment of which their own health and that of their offspring is so largely dependent.

The mental adjustment and quietude of a mother during lactation is of equal importance with that of her diet and regimen. The following remarks of the physiologist, Dr. Carpenter, deserve much consideration by mothers at this time:—*

"So many instances are now on record in which children that have been suckled within a few minutes after the mothers have been in a state of violent rage or terror, have died suddenly in con-

* Manual of Physiology, 2nd Ed., p. 509.

vulsive attacks, that the occurrence can scarcely be set down as a mere coincidence; and certain as we are of the deleterious effects of less severe emotions upon the properties of the milk, it does not seem unlikely that in these cases the bland nutritious fluid should be converted into a poison of rapid and deadly operation." A serene and gentle spirit, a mind not easily provoked, full of that love which is long suffering, kind and forgiving, such were the mental and moral character the most to be desired in a mother, and exercising the most marked influence over the secretion of the milk, and the well-being of her infant. That all-sufficient grace which lifts the Christian above his infirmities, and fills him with peace of heart and mind, is the remedy to which a mother prone to the indulgence of a fretful spirit should be directed, and which cannot be sought altogether in vain if sought by faith in Christ.

If any simple cause, such as constipation, appear to call for medicine in the mother, she cannot do better than take a moderate dose of castor oil, or some unirritating vegetable purgative. Saline purgatives are not so desirable, as they are found to enter into the lacteal secretion. Castor oil may also with safety be given to an infant for the same cause;

occasionally the other vegetable oils are useful, such as almond and olive oil, but of these larger doses are necessary. Diarrhœa should not be trifled with in a child of any age. It has already been said that delay in seeking proper advice is often the cause of alarmingly fatal attacks of this kind in early life. The warm bath and one grain of grey powder may generally be safely used; but if it does not yield to these let medical assistance be at once obtained.

The subject of weaning forms the next point of importance in the successful management of the infant. The sarcastic adviser before quoted thus instructs mothers in their duties on this point. "Never be guided by the child's teeth in weaning it. Wean before the first teeth are cut, or after they have learned to bite. Wean all at once with bitter aloes or some similar devices, and change the diet suddenly. It is a foolish thing to ask the medical attendant how to regulate the food of children; he is sure to be overrun with bookish prejudices, but nurses are practical women, who understand thoroughly matters of this kind."

The way in which weaning used to be and is unfortunately still very frequently performed, rendered it a time full of trouble and anxiety to the

parent, and of suffering and misery to the child. Universal experience has shown the danger attendant upon any sudden and entire change of diet in the adult; and how much more in the infant with its tenderly constituted and irritable system! It is therefore of obvious importance in weaning a child to attend to the following points: first, to select the right time; next, to decide upon the right method; and lastly, to be watchful over the effects on the child. These points I shall now proceed to consider.

As to the time. It is more difficult to say how long an infant should be entirely or chiefly supported by its parent, than it is to say when it should not be so nourished. The extreme limit of lactation varies with the circumstances of the case, but under ordinary conditions it may be certainly said that a child ought not to be weaned under six months. Until ten or twelve months have elapsed from the time of birth, the infant should derive its chief support from the mother's breast. I have been long of opinion that English mothers wean their children at a period considerably within that indicated by nature. Every circumstance connected with the early history of the infant teaches us that it was intended long to be dependent on a mother's care, and in this, as before observed, man is distinguished

in a remarkable manner from the inferior creatures. In order to form a tie lasting as life itself between a mother and her child, the latter has been made for many months of its first existence absolutely reliant upon its parent for food from time to time. If man were in a state of nature, the period of lactation would in all probability always extend to eighteen or twenty months. But in artificial life a time so prolonged is impracticable, and might often be absolutely productive of bad consequences. Yet I am strongly disposed to believe that, as a general rule, infants should not be weaned under twelve months, always upon the conditions that the mother's health continues good, that pregnancy has not again taken place, and that the child evidently thrives upon this system. Many are guided by the appearance of the teeth without any other consideration, and when six or eight teeth have made their appearance they wean their children. This rule is, with a limitation, deserving of attention though not of strict compliance. When a child has cut eight teeth it is not so much an indication of a necessity for weaning, as it is a hint to intermix artificial with the natural food, and if this be done gradually, and in a rational and intelligent manner, by the omission of one or more of the periods of suckling, and the substitution of

artificial food at these seasons, weaning will be a very easy matter ultimately. Still I would repeat that for twelve months an infant should derive its principal support from the mother's bosom; and if the child be delicate it may be benefited most materially by a yet more prolonged period of lactation. I need scarcely say that if exceptional circumstances arise they should be submitted to the advice of competent persons, and a departure from the general rule in either direction ought not to be made upon the authority of the very best books, or the unskilled experience of nurses and housewives.

As to the manner. The right method of weaning is a gentle, gradual, and watchful diminution of natural food, and an equally gentle, gradual, and careful increase of its artificial substitute. Let a nursing mother begin by omitting one of the periods at which she suckles her infant, and at that time give it a light meal in the following manner. A bottle should be procured, the mouth of which is covered with a prepared teat, or a piece of soft leather, and into this a portion of asses' milk warmed should be poured, and the child permitted to suck as much as it is disposed to take. If asses' milk be not procurable, the only other substitute is cows' milk, which must be diluted one half with water, and

slightly sweetened with a little powdered sugar. In respect of its nutrient qualities such a meal is almost equal to that from the breast, and is far preferable to any admixture of farinaceous food, or of animal diet. I have no hesitation in assuring any parent that if her child is healthy it will thrive upon this simple system of milk-feeding. Nature and experience alike evidence its value. Until a child is eighteen months or even two years old it should be fed by suction, not by the spoon, and milk diet is adapted for it throughout this period. By continuing gradually to decrease the frequency of the times of nursing at the breast, and firmly adhering to the diminution, unless otherwise directed by medical authority, weaning will be quickly, safely, and comfortably accomplished, and the child may be then allowed to feed entirely upon diluted milk, or that of the ass. It is not to be denied that children are often made fat and plump by the addition of farinaceous matter to their food at an early period, but I am strongly disposed to question the healthiness of that condition. It must not be supposed that a mere deposit of fat is an indication of physical wellbeing. I believe that in children not less than in adults it is not unfrequently the token of a feeble and unhealthy condition of body,

and we should be averse to any system of dieting which promotes an increase of mere fat, without at the same time contributing those nitrogenous elements which are necessary to constitute muscle. In milk the proportions of the nutrient elements required by the body are exactly adapted to its requirements. Milk is nature's food, and to the close of the second year of infancy it is not only a simple, easily obtained, and sufficient aliment,—but it is the best that can be procured. As food, we should as a general rule therefore discard bread, biscuits, oatmeal, arrowroot, flour in various forms, and urge the adoption, as far as may be possible, of the simple method of rearing their children just described.

I am disposed to consider the use of gelatine as not only wholly unobjectionable in the case of delicate or weakly children of this age, but as absolutely serviceable in a remarkable manner. This opinion is contrary to that of some writers on the dietetics of infancy, who upon erroneous views of the assimilation of this substance have been led to classify it with the injurious matters just named. The following facts lead me to regard this as a mistake. Gelatine, which includes jellies made of isinglass, calf's-foot, or the dried gelatine of the shops, does not require digestion at all; it passes unaltered into

the blood when taken into the stomach as food in a liquid state, and requires no expenditure of digestive power in its preparation, and no exercise of vital activity for its absorption. It is therefore plainly a most bland and unirritating kind of food.

But gelatine forms a very large portion of the tissues of all young animals. Its ordinary source from the foot of the calf is an illustration of its abundance in the young. In order that the due supply of this material may be kept up in the system of an infant, some of the albuminous matter which it receives in the milk must be decomposed to repair the waste of the gelatinous tissues. If therefore gelatine is given to a child it goes directly to the supply of the gelatiniferous tissues, and there is therefore the less need for any appropriation of the albumen of the milk. And as this implies a double loss, first of vital force in the decomposition, and next of nutrient material which might have gone to feed other structures, it is plain that the addition of gelatine to a child's food when its digestive powers are feeble, or the child weakly and delicate, is a positive gain. As regards experimental evidence of the usefulness of this material, I have little hesitation in saying that when judiciously used as an occasional adjunct to the food, it

will be found to deserve the confidence of the medical attendant and of the parent. And the experience of numerous authorities in this country and on the Continent confirms these views.

The best way of giving gelatine to an infant is by adding it in small proportions to the warm and sweetened milk and water of the ordinary meal. It is most conveniently kept in the form of a jelly, made either from isinglass, prepared gelatine, or the calf's-foot, one or two teaspoonfuls of which may be easily melted and added to the meal.* Of course neither wine (except by medical advice) or any other flavouring will be added to the jelly. Healthy children do not require any addition,—but it is well to know that such an addition as this is harmless.

The last point to be attended to in weaning is to watch the result to the child. It is to be expected that the mother will have some little difficulties to contend with, and among these the most painful to encounter are those which spring out of the altered health of her infant, should such take place. It is

* It is necessary that I should expressly disclaim the intention of giving gelatine as a substitute for milk. It is merely a useful *addition* to the child's food.

always to be presumed that a mother will, if she have any doubt as to the state of her child's constitution, first consult with her medical attendant before weaning, and be guided by his advice. But healthy children will often suffer to some little extent even by the most skilfully and intelligently arranged system of diet. A little diarrhoea or feverishness may ensue, and it will need much patience and careful supervision of the time, nature, and regularity of the child's dieting to obviate causes of irritation. Some of these arise from negligence of the nurse in not keeping all the vessels sweet and free from acidity. Some may be due to the unwholesome state of the substituted milk. If they do not quickly subside, advice should be had. Very generally, however, and particularly if the mother has observed the plan laid down of gently, gradually, and watchfully diminishing the times of suckling, and the substitution of the artificial food, no trouble will arise, and the child will thrive as well, often apparently better, than before.

In order to repress the secretion of milk, the mother will generally require to take a little aperient medicine. But it is desirable to avoid saline purgatives at this time, since the presence of these even in minute quantities in the milk may add to the

existing causes of irritation in the child resulting from the change in its diet. Occasionally they are found to be indispensable; but as a general rule, such aperients as castor oil, extract of jalap, manna, colocynth, and the like, are to be preferred. The gentle friction of the breasts with a camphorated oily liniment gives great relief, and causes a rapid subsidence of the tension, pain, and hardness often occurring at this time.

The importance attached in a preceding chapter to a full exposure of young children to the beneficial influences of light and fresh air, may seem to render it necessary here to observe, that this requires to be done with due precaution. Young children must be gradually exposed to cooler air than that of the apartment of their birth, and with prudence and discretion taken ultimately into the open air. Their clothing should be warm, and great attention should be given, especially in delicate children, to the due covering and protection of the legs and body. The danger of tubercular disease in the mesenteric glands, or in the abdominal organs, should never be lost sight of. The plan of permitting young and delicate children to go out bare-legged in cold weather is unjustifiable and thoughtless, and fraught with danger.

The importance of regularity in meals, exercise, periods of rest during the day, and retirement for the night, even from the earliest periods, need not be here insisted upon by me, since these are points of such obvious value as to be in little danger of being neglected, if the other advice given in this chapter be attended to; and if it be not, then it were useless to add another responsibility to the existing ones of the parent.

The subjects treated of in the present chapter have involved an unwonted latitude of discussion. Yet it has ever been prominently before me, that if parents only knew rightly how to manage the physical education of their infants, the right management of them in after years would follow as a matter of course. I trust I may therefore not have been thought to have given undue extension to a subject so practically interesting, and really momentous, as the healthy management of a child in its period of infancy.

CHAPTER VI.

PHYSICAL TRAINING DURING THE PERIOD OF
CHILDHOOD.

THE amplitude permitted to the development of the general principles suggested in the preceding chapter on the proper management of children in infancy, renders it unnecessary in the present chapter to pretend to more than a general extension and evolution of the same. For infancy is only the youth of childhood; and although the periods may be artificially separated, they are naturally inseparable, and merge insensibly into each other. The subjects claiming the chief attention of the parent in the interesting epoch now opened,—as respects, that is to say, the mere physical training of her children,—are food, air, exercise, and clothing; and to a few practical suggestions on these and related topics this chapter will be devoted.

If the reader shall have attentively considered the facts stated in the early part of this book, the conclusion arrived at will inevitably be, that there exists

a vast amount of disease among children which *might be prevented*. If this be true, it is a very serious truth, for its admission lays us under the responsibility of a waste of the most precious of the Creator's gifts, that of human life. Perhaps the greatest amount of good in the way of prevention may be done among the poor; but a very notable sum might also be produced by a thoughtful attention on the part of those in better circumstances. One might suppose that merely to hint to a parent that by due precautions many evils to her offspring might be averted, would certainly be followed by a scrupulous observance of the directions given. But experience has only too frequently shown, that in spite of the most clear and positive exposition of these dangers, and the most simple and practicable instructions how to avoid them, the educated parent, equally with her more humble and less instructed countrywoman, has so entirely put such things out of her thoughts, that the threatened dangers have come upon her children as things the possibility of preventing which had never occurred to her. That such may not be the case with those who read this work, I have been at some pains to secure, by calling attention, in the first instance, to the frightful mortality among children, and subsequently by an

attempt to explain its producing and predisposing causes. With the same view I may now be permitted to invite the thoughtful attention of the reader to the subjects of this as of the foregoing chapter.

"Sanitary people," observes the acute writer, whose remarks we have now several times before quoted for the amusement and edification of the reader, "will allow a child up to its seventh year nothing beyond bread, milk, water, sugar, light meat broth without fat, and fresh meat for its dinner when it is old enough to bite it, with a little well-cooked vegetable. They confine a child, poor creature, to this miserable fare, permitting, in due season, only a pittance of the ripest fruit. They would give children, while they are growing, oatmeal and milk for breakfast, made into a porridge. They would deny them beer. You know how strengthening that is, and yet these people say that there is not an ounce of meat in a whole bucketful. They would deny them comfits, cakes, wine, pastry, and grudge them nuts; but our boys shall rebel against all this. We will teach them to regard cakes as bliss, and wine as glory; we will educate them to a love of tarts. Once let our art secure over the stomach its ascendancy, and the civilized organ acquires new

desires. Vitiating cravings let the sanitary doctors call them; let them say that children will eat garbage, as young women will eat chalk and coals, not because it is their nature so to do, but because it is a symptom of disordered function. We know nothing about function. Art against appetite has won the day, and the pale face of civilization is established."

Before the birth of a child, its nutrition is carried on through the blood vessels of the mother by a very simple process. The function of digestion, unless it be supposed to be effected by the singular gland, called the thymus, which exists only in foetal life, is as yet dormant. The child is nourished by a sort of vegetative process; and very little waste ensues. But after birth the development and nutrition of the child are alike dependent entirely upon the perfect fulfilment of the function of digestion, and from this period to the close of life a continual succession of reparations and of waste is going forward. The causes of waste in the body of a child, as in that of the adult, are chiefly the constant demands of the lungs in respiration, the muscular activity of the body, and the requirements of the system for the nutrition or development of the several parts thereof. The whole of these causes are more active in childhood, proportionately, than in the adult.

Every breath drawn by an infant implies a loss of material. The muscular exertion necessary to fill those tiny cavities, and the combination of the oxygen with the blood therein, could not take place without waste. The reparation of these continual losses is through the digestive function, which during infancy requires as its only aliment the mother's milk.

But as the age of a child increases, its muscular activity, its vehemence of respiratory function, and its rapid growth, since they imply a vastly increased consumption of material, also afford an explanation of the sources of the large demands for food now made by the organism. To supply this great waste, there must be a corresponding fulness and frequency of proper and sufficient food. The health of a child as regards its growth and nutrition now depends upon the capabilities of the digestive apparatus, and upon its being fed with aliment of the right kind and quantity. If either of these conditions is interfered with, that is, if the digestive function is weakened or the food be improper in its nature or amount, the child will suffer, for the equipoise of its condition as a healthy being will have been destroyed—the waste will exceed the supply. Such a child will become thin and pale, notwithstanding that it may

be fed with highly animalized food, and in excessive quantities. But this is not the only bad result; the nutrient materials supplied by the blood to the living frame will degenerate in quality,—they will become ill adapted for building up tissues, organs, or for any other purpose, and it would appear extremely probable that these very materials are deposited in their feebly vitiated state, and appear in the form of tubercle.

In order, therefore, that a child may be nourished in a healthy manner, it is essential that its source of nutrient materials should be a suitable one, and that its power of dealing with them should be adequate to its requirements. But it is particularly deserving of our notice, that error in the first of these conditions may be and generally is followed by a disturbance of the second. The most frequent, perhaps the exclusive cause of disordered digestive function in children, is an injudicious or improper system of feeding. The suffering, emaciation, and delicateness of thousands of children, thus mismanaged, are not to be generally attributed to any natural defect, but may be viewed as almost entirely of a preventible kind, and the means of prevention lie chiefly in a right adaptation of food to their condition. It were to be desired, in fact, that a disordered and debilitated

digestion were the worst of these evils of our own infliction. Experience has shown that one of the most frequent causes of some of the most formidable of the convulsive diseases of infants and very young children, and amongst them of that called infantile laryngismus, is the administration of unwholesome and improper food.

I need not, in view of these considerations, proceed to urge the importance of a right method of feeding children, or the numerous and protracted evils attendant upon the opposite conduct. Improper feeding is, it is true, most fatal in infancy; but its bad effects in childhood are not always so directly perceptible as when further advanced in life, giving harass and trouble to the adult, if nothing worse.

The diet of a child, on commencing its third year, should be simple, nutritious, and unirritating, and the best description of food for this period will be that which contains, in due proportions, albuminous, oleaginous, and saccharine or farinaceous matters. The following may be taken as a type of a right distribution of meals throughout the day, and of the best and simplest articles of food to be consumed at them :—

Breakfast, at eight o'clock, of milk, diluted with one-third water for younger children, plain milk

for older, with a sufficiency of stale bread soaked in it, to which a little salt and a little sugar may be advantageously added. For younger children good plain biscuits, of a light kind, on which the water for diluting the milk must be poured in a boiling state, and the milk then added, will prove the best kind of a morning meal. The quantity may very generally be left to be decided by the child's appetite.

Luncheon at twelve o'clock. This should consist of nothing more than a plain biscuit, or a piece of bread and butter, and if drink be required, it should be either a little very dilute milk and water sweetened, or simply toast-water. If dinner be at one o'clock, a piece of bread or a biscuit at eleven will be advantageous. Many children will do without this subsidiary meal, but it is generally advisable to adopt it.

Dinner at one or two o'clock. If the slight luncheon described prevents a child eating a hearty meal at dinner, then it must be omitted, for dinner is the important meal of the day. Caution must be used in giving a child meat for the first time. It will be well to let the younger children commence with a cupful of chicken or veal broth. Beef-tea, which is often given, has appeared to me too stimu-

lating for such young subjects when in health. Toasted bread may be put into the broth, but no other condiment than a little salt is to be used except by medical authority. Salt meat should be expunged from the diet table of children. Fresh meat, roast and boiled (of these, mutton is the best kind of meat for children), with occasionally a little fish of the lighter kinds, as whiting and soles, should be their chief support in this way. The nurse should either finely cut or pound the meat in the first instance, but a child may, with proper management, be early taught the due mastication of its food. Variety is very essential to health in respect of meats, but it must be variety of a wholesome kind, not that produced by artificial cookery. Children may become extremely fond of potatoes, and when good and well boiled, they may be very freely partaken of, saturated with a little gravy free from fat. They are best when mashed with milk only. To alternate this with meat now and then will be found useful. To healthy children a moderate use of other vegetables may be generally permitted with safety and advantage. It is probable, in fact, that they are actually desirable; but if they were disliked by a child, we should be very unwilling to enforce their consumption. The puddings suitable for children

are the farinaceous kinds, as arrowroot, rice, sago, tapioca, bread, and some other light suet puddings, &c. Occasionally it will be desirable to give a little fruit; but pastry is by no means suitable. If we give children an orange or an apple, or two or three strawberries, we should give it after their dinner, or at their ordinary lunch-time; for no habit can be more mischievous than to educate a child to a craving for little matters of this sort at other than meal-times. Such things occasionally in extreme moderation cannot be injurious to any healthy child; but all the undigestible envelopes and other parts of fruit should be removed, or their removal by the child should be required and effected.

Wine and fermented liquors are, it is almost unnecessary to remark, wholly unsuitable for the use of children in health. Instances however in which, even among the better classes, their use is encouraged occasionally present themselves. I regret to say, that I have known the children of highly respectable persons taught to drink ale and wine at dinner, and the use of these unnatural fluids advocated. I have known children, not two years old, to whom brandy and gin were not unfamiliar liquids! and many who were freely allowed to drink ale. Occasionally, the condition of children may demand such stimulants;

and repeated instances come under medical notice in which their timely and judicious exhibition has been followed by the most striking benefit. But we should be very averse to give to a child wine, as wine, even medicinally. The requisite quantity should be added to a little jelly, and administered warm, or to a little weak beef tea. Children cannot understand in their very early life why they are to be denied what their little brothers or sisters are supplied with; and it is therefore desirable, wherever possible, to avoid perplexing a child's mind with doubts as to the affection, impartiality, and consistency of the parent, by giving the stimulant in the manner described. Such is also the best, as well as the most expedient mode of its administration. No solid food, except in illness or extremely delicate health, ought to be taken between dinner and tea.

Tea at five or six o'clock. Tea, as generally made, is a fluid too powerfully exciting to form the child's meal. Its 'tea' should be warm milk and water, sweetened or not, as may be thought desirable. Cocoa made from cocoa-nibs is a useful addition to the breakfast or tea. It is erroneous to consider sugar non-nutritive. Of its utility to children we have the strongest proof in the amount in which it is present in the mother's milk. Sugar is an element

of food assisting to keep up the animal temperature, and its moderate use cannot be reasonably objected to. But if any symptom of disordered digestion present itself, it may be desirable to remove it altogether; since no question can be entertained as to its ready capability of entering into a state of fermentation. As tea is the last meal of the day, children may be very safely allowed and encouraged to make it a hearty one. It should consist either of bread and milk, as at breakfast, or of bread and butter, with warm milk and water or neat cocoa. Occasionally, a biscuit, or a rusk, or a little dry toast, will be to the child an agreeable variation of this simple meal.

Children generally require nothing after their tea; nor if they are put to bed, as they should be, in an hour or so afterwards, is additional food in any case required. I have met with several instances in which children appeared to suffer an agony of hunger after going to rest, and awake with it, in four or five hours after tea-time. But these cases betoken the existence of disease; and healthy children, after the second or third year, do not require feeding in the night, nor anything between tea and breakfast-time, provided the latter were not unusually delayed.

Any mother who will take the instructions here

given as her guide in the physical education of her children, as far as regards their diet, and will intelligently apply them in practice, may be assured that the miseries and suffering resulting from improper feeding will be unknown in her family, and that she will give her children the best and simplest means of attaining a sound and vigorous physical, and, indeed, moral condition. A learned continental philosopher has written an elaborate work on the influence of food over man as a thinking and intelligent being; and one of his results is the truly remarkable concordance of mental debility with a system of bad or improper feeding. The same may often be seen in families where every principle of sound dietetics is outraged, and the children are fretful, unhealthy, incapable of muscular or mental exercise, chiefly, or at least in an important degree, because they have been almost from infancy the victims of a bad or unwholesome system of feeding. A well and properly fed child is generally a happy being, and its mental and physical powers are lively and active.

More space has been devoted to the subject of food than will be necessary for the others of exercise, air, and clothing; because more serious errors are committed on this than on any other subject of

the physical management of children, and partly because the latter are less particularly within the limits of the counsel of the writer as a medical practitioner. In actual fact, a parent who pursues a right system of feeding her children will not be likely to go far wrong in other matters relating to their health.

Children wholly resident in the metropolis, or in very large towns, have great need of air and exercise. Those who reside in the country during the early years of life are in a far superior position as regards their probabilities of health and life than the children of towns. Wherever it can be accomplished, children are better away from the influence of the air of cities until they are ten or twelve years old; and if reference be made back to a page in a preceding chapter on the comparative mortalities of town and country, sufficient cause for this advice will be perceived. This is, of course, impracticable with the majority of town-residents; but wherever the position of the parents admits of it, then it is very desirable. It is an act of mercy and love to a little child to make the associates of its early years the fields, birds, and woods, rather than the dull and airless streets and squares; to fill its mind with bright pictures of life and nature, rather than with

the impressions and monotonous realities of artificial society. To its tender body the mercy is greater still.

The children of those who are compelled to reside in towns must be, as far as is possible, placed on a footing with their fellows in the broad air and sunshine of country life. Their confinement in-doors should be reduced as much as possible, and their time of instruction should not be permitted to trespass on that of exercise. It is certain that robust country children are not so sharp and intelligent as town children; for in early life great animal vigour would appear in some way incompatible with intellectual development. But of what avail is a precocity of intellect with a backwardness of constitution, —a powerful mind in a feeble body? Would I could impress parents more with the fact, that there is time enough, when the constitution of a child has grown strong and solid, to cultivate with such great assiduity its intellectual powers. I would be far from advising their neglect, but I deprecate their too early development. Was ever an "extraordinarily clever child" seen, except in a delicate little body? Children need at first to be gifted with vigour of body; that of mind comes after. All infant prodigies are short-lived. Let me never be thought to sanction an unmeet neglect of cultivation of moral

and intellectual faculties in thus speaking. A child may be an intelligent and reasoning being without a necessary entail of physical debility ; but all experience goes to show that a premature expansion or enlargement of mental powers in children cannot take place without a corresponding loss of bodily vigour. It might indeed be argued, and with reason, that the surest method of attaining ultimate mental stability and intellectual advancement, is to secure to a child in its tender years a sound and healthy condition of that organism by which the mind is to act. A master musician may be the performer ; but what sort of melody can be drawn at the best out of a weak and shattered instrument ? We should seek so to educate our children, that they should neither be mere animal nor mere intellectual beings in their childhood ; and in order to this, we should endeavour so simultaneously to develop their powers of body and mind that neither the one nor the other should be dominant to its injury. Such appear to me the dictates of nature and of reason.

It may be proper, since I have touched near the subject, that I should make the most marked exception as regards moral and religious knowledge. A child can never be too early, nor too diligently, instructed in that fear of the Lord which has been so

beautifully described as "the beginning of wisdom," or in all the moral duties it enforces. It is written of John the Baptist, that "he was filled with the Holy Ghost from his mother's womb."* I would not mean that religious teaching, any more than any other, should intrude upon time necessary for health. In truth, religion—the religion of Jesus the Redeemer—should be the element in which the child should be always placed. It should be less an exercise than a habit. But religious teaching was never known to do a child bodily harm. However great may be our power of opening up a child's mind, and filling it at a very early age with premature wisdom, we are powerless as regards its heart, save as instruments in His hands who alone can open that wild and wayward casket of the soul. While, therefore, it may be actually possible to over-stimulate a child's intellect at the expense of its body, the same cannot be said as regards its affections, and their direction to Him who is the only legitimate object of supreme and inexhaustible love.

Air and exercise are to be regarded as the antidotes to the evils of a town life, and to the necessary confinement during hours of study. The purest

* Luke i. v. 15.

and freest air out of doors will, of course, be selected, and common prudence will dictate the most appropriate season and weather. The earliest and the latest hours of the day are always to be avoided, and in summer those of mid-day are also unsuitable for this purpose. The apartments in which children are kept in weather not permitting their out-of-door recreation should be large, light, and well ventilated. There can scarcely be too much light, too much space, too much air, for a being most at home in the fields, with the blue sky for a ceiling, and the winds for ventilation. Especially at night, these apartments should be well ventilated; and at most times during the day, when the children are abroad, the doors and windows should be widely opened. The Arnott's ventilators, when properly managed, are excellent arrangements for removing the vitiated air of a nursery. That they do not occasionally act is generally due to some defect, either in the supply of air to the room or in the draught of the flue; and, by narrowing the mouth of the fire-place, and opening some channel for the fresh air to enter, the difficulty will be readily surmounted. Sometimes, a small piece of perforated zinc may be let into the upper part of a window-frame with much benefit to the air of a nursery.

For children resident in towns, four hours' daily exposure to the fresh air is scarcely an equivalent for the amount enjoyed by country children. In open weather, many of the latter are in the air five, and even six hours every day; and, it must be remembered, they breathe a fresher and purer air than the inhabitants of the town. It may be a great sacrifice of convenience to many parents to permit to their children two absences from home daily for two hours at each time for, as it may be stated, the mere purpose of taking the air; yet I fully believe that no parent will find ultimate occasion to regret it, while many have to lament the development of disease in their offspring, of which fresh air might have proved a powerful means of prevention.

The expression given before of my views on the necessity of light to health in children, will justify me also in expressing my objection to the variety of sun-shades which, even in moderately-warm weather, are put on children. Solar heat is, it is true, a most undesirable thing for a child to be exposed to in its intensity, but sunlight can do none any harm; and if exercise is taken at those periods of the day when the heat is not intense, the sun-shade, for children of five years old and upwards, may be dispensed with. Younger children require much pro-

tection of the head from the solar rays. The skin will, of course, be less fair and delicate in childhood, but the constitution will be the more healthy and vigorous.* Light is, it is well known, essential to the fulfilment of the functions of growth and nutrition in plants, and it appears very probable, that it has also a connection, as yet to be distinctly recognised, with that of animals. The chemical products of respiration in a plant are, it is true, the reverse of those in an animal; but the phenomena of growth and nutrition, as results of a vital activity in the plant, are comparable in many respects with those of animals. Light has been already shown to be in a measure essential to animal development—and development, rightly understood, is only the extension of the function of nutrition, or is at least allied to it. Hence, I believe, the desirableness of taking all substantial meals during day-light.

Children are naturally prone to immense activity and even violence in exercise. What a blacksmith does for his daily bread, that, and with all its limbs, a child does for its daily amusement; and it is

* The deep brown marks of "sun-burns" (technically *Ephelis*) generally disappear in the winter, and do not eventually injure the delicacy and softness of the skin, when it has ceased to be exposed to the sun.

necessary to its health that it should be so. A child performs every action with vehemence, if it is in full health and vigour, and its sport partakes of this character. When a child runs every part of its body is running, when it leaps every muscle leaps, when it climbs every fibre is bent. A child does everything in this way heartily with all its might, without any artificial reservation of power or limb. This is natural to it, and such ought to be the permitted character of its play. Such in a word is what I would consider healthy exercise. Whether in or out of doors a child's exercise should be hearty and earnest, and such it has a tendency to be if not repressed by parental restraints. There is a wide distinction between vulgarity and full, free, healthy, and joyous exercise; and there is a distinction yet wider between this and that ever to be dreaded subdued mannerism, which seems to indicate that all the spirit of childhood is quenched and dead within its victim. An intelligent mother will soon teach her children that rude and coarse behaviour is not a necessary adjunct to the freest and happiest liberty of muscular activity and exercise. A child should run if it is so disposed as hard, as long, and as fast as it can if it is in health. It may jump and clamber, dance and swing with all its powers, and it

should never be restrained by us, at time of exercise. That is a poor type of a child which, if in health, cannot do all this, and do it gracefully and naturally, with full enjoyment in the doing of it, and without real vulgarity of conduct. But a very small per-centage of our town children know what it is to have full liberty of exercise, and their awkward and artificial conduct when joining in sport with their fellows in the country is often painful alike to themselves and to those who observe them. It is scarcely necessary to add that a neglect of common precautions forms no part of the duty of a parent while permitting free exercise to her children. This, however, may be added, that the more nearly children are brought up as regards their physical education in a natural condition, the fewer are the risks to which they will be exposed whether in play or at any other time.

The clothing of children is as strictly a subject of medical inquiry, and falls as properly under our notice, as that of food or exercise. It is necessary to avoid of course the opposite extremes of too much and of too little protection of this kind. If in a former part of this work I have appeared to counsel unusual warmth in the first few days of infancy, it has only been because much consideration has led me

to believe in the absolute necessity of great protection from cold at that earliest period. The same necessity extends, but in a continually lessening degree, through the first four or five years of early life. But this varies to a remarkable extent with the constitutional vigour of children. Those in whom there exists any cause to suspect tuberculous disease require the greatest care, those who are robust and hardy require the least. Clothing should be so arranged about the person as to protect the most susceptible parts, such as the upper portions of both lungs and the abdomen; in both these particulars the clothing of children is often lamentably defective. No event is so common as to meet with children who are the victims of tuberculous disease, whose bared chests and unprotected bodies are swept by every penetrating wind. The clothing of children should also be of such materials as are really efficient for their preservation from the undue influence of the weather. It is difficult to understand the precise motives which have prescribed woollen trousers for boys of ten, and cotton drawers for the more delicate child of five years old. Their clothing should also be so arranged as not to interfere with the freest muscular exercise, whether of the limbs or trunk. Nothing should impede or give difficulty

to the respiratory muscles in fully expanding the chest, and any arrangements of dress which have this effect are reprehensible. So much has been said against stays for girls, that I feel almost in despair at finding any allusion to such destructive contrivances being still as much needed as ever. When it is known that stays shorten life, interfere with and injure the most important functions of the body, and are wholly unnecessary and artificial things, it might be thought that no parent would permit their use to her children; such, however, is not the case. It is of much importance to keep the hands and feet of a child dry and warm, and much suffering and danger may be arrested by attention to this point.

The result of a right physical training of children in these important particulars of food, air, exercise, and clothing, should be the production of a hardy and a healthy family; and even where delicacy of temperament interferes with such a result, an immense amount of misery and of absolute disease may be prevented, stilled, or deferred, by a careful and intelligent observance of the rules laid down.

The only other topics upon which it is necessary to say a word in the present chapter are ablutions and sleep. Bathing in water moderately warm, morning and evening, is an absolute requisite for

the preservation of a child's health. It will on this account be found very useful to have an unlimited supply of water, warm and cold, laid on in the nursery, in one corner of which a good-sized bath should be placed. For young children an ordinary moveable bath is sufficient, but there should be abundance of soap and water used in every nursery. In summer a cold bath will be useful for children of the age of five or six years, if no constitutional defect or delicacy exist to prevent it; but in winter and for younger children the water should be warmed slightly; very young children require their baths still warmer.

Until a child is five years old it should, if possible, sleep an hour or more in the day. Sleep is in every sense a restorative. During sleep the waste of the body is surprisingly lessened, and the purely vegetative or growing process goes on uninterruptedly. Hence the importance of early retirement to rest, and the danger of keeping children up until late in the evening. Children in a natural condition will for the first four or five years of life sleep ten or twelve hours out of the twenty-four, and parents should provide for this amount of rest being duly secured to them. In earliest life few phenomena are more deserving of notice than the amount of sleep

which appears natural to the infant. During these precious hours the child's body grows and develops without hindrance, and every portion of it receives a supply of material devoted to this purpose, which while the child is awake and in activity goes in other directions, and to supply the exhaustion produced by waste.

It is surely unnecessary that I should urge the blessings of a healthy family as an incentive to the careful observance of the rules inculcated ; yet if it be so it is difficult to understand the precise nature of that parental love which is agonised by a trifling illness in a child, but is wholly inoperative in removing its causes after its recovery. The truest affection a mother can exhibit to her children is to keep them from things hurtful, that preventible disease may not come upon them, rather than to be found weeping at the bedside over sufferings which but for her indiscretions need never to have betaken her offspring. Gentleness and affection, blended with much discretion and decision, should be brought by every parent to the duty of physically rearing up their children. And the Christian parent is acquainted with a heavenly source from whom, if they exist not in her naturally, they may be obtained through faith and prayer.

CHAPTER VII.

MINOR AILMENTS OF CHILDREN.

IT is my intention in this chapter, in furtherance of the design of this work, to offer some words of advice on the management of disease in children. In so doing, however, it is far from my intention to take the place of the medical practitioner, whose presence should be immediately required on the accession of any illness of moment. Nothing is more common, more lamentably common may with propriety be said, than the idea that with a good book on domestic medicine the mother of a family has little need of any other kind of advice. Many are the fatal results to which this opinion has led. If it be an acknowledged fact in the experience of those whose whole lives are spent in the study and treatment of disease, that the diseases of children present peculiar difficulties in their investigation, and are sometimes

almost hopelessly obscure, how great must that error be which can lead to the supposition that the best book ever written will enable a woman to discover the nature of the disease and to apply its right remedy. Alas ! this is, after all, only another phase of that dreadful trifling with life which takes place in the period of childhood. What mother would venture to treat her husband when sick by the help of a book ? what husband a wife ? Yet the chances of a mistake would be actually less in these cases than in that of a child, and it might be really safer to give medicine to the adult even in the most inflammatory disease than to the child.

In the medical management of their children the people of this country are apt to fall into one of two errors,—either the medical man is summoned too often, or his assistance is too tardily and too seldom procured. The former, although an error, is generally a very safe one, for no acute disease can ever arise without its earliest symptoms being seized and attended to ; but the expense it unavoidably involves often operates with others so as to produce the very opposite result. It were to be wished that medical assistance should always be sought when it is really needed, and at no other time. But the obvious difficulty that arises is when medical aid ought to be

had ; and as this is a question involving a multitude of varying circumstances, it must be left to the discretion of a parent. There is, however, little real fear that an attached and attentive mother will permit disease to make much progress before she calls assistance to her child.

In writing this and the following chapters on the minor and more serious ailments of children, this object has been kept in view—that it would be important to give a parent every facility for discovering whether the complaint under which her child may happen to suffer is of such a kind as to render medical assistance necessary, and to direct her in their domestic management. There are, undoubtedly, a number of little causes of illness in a child, which come very properly under the term minor ailments. They are often mere transient attacks, which pass by with the rapidity of a cloud, and leave the child's atmosphere of life as bright as before.

In the diseases of children, as in truth in many of those of the adult, the more prominent symptom is, however, very often regarded as the malady itself, of which it is, in fact, only the indication. The jaundice of the newly born, several of the cutaneous eruptions, and the aphthous state of the mouth

frequently seen in infancy, are of this class. It is, therefore, necessary to look beyond the mere token of the existence of disease into its producing causes, and their treatment must be directed to the removal of these, on the accomplishment of which the symptom will also vanish. If, therefore, a parent does not find the symptom she can easily recognise disappear under simple domestic management, recourse must be had to medical advice. Medical men will not be misled by a mere symptom; and it will be most important for the child that the real causes of its complaint should be brought to light and submitted to treatment. I cannot, with an easy mind, venture to offer advice even on the minor ailments of children without cautioning parents that even these have their perils, and an attack which may be very insignificant in its origin may acquire very alarming characters if serious indications are not attended to when they develop themselves.

With the joy and happiness attendant upon the birth of a first child, the young mother soon discovers an adulteration of careful anxiety, of doubts and fears as new to her as the pleasure of enfolding her own child in her arms. The tender body of her child is soon the victim of some little malady, which,

though of really small importance, may fill her with the most painful fears as to its safety. Among these causes of alarm, a very frequent one is the appearance of a deep yellow suffusion of the whole skin of the infant, even extending so far as to tinge the whites of the eyes: this is the jaundice of the newly born. Mothers of families and nurses are well aware that soon after birth the skin of every child becomes of a crimson colour, which gradually fades, becomes brownish, and in a few days is entirely gone. This is the natural course of events; but the jaundice of which I have spoken may be known by its distinct yellow or lemon-coloured tinge, affecting also the eyes. Generally, the tinge after lasting for two or three days begins to diminish, and in eight or nine days has entirely disappeared. The child is as well after as though nothing of the kind existed, and if it continues so there is little need of medical interference.

The best treatment is the administration of a very gentle dose of castor oil—half a teaspoonful, preceding it by a grain or so of grey powder (hyd. c. cretâ). It is also of much consequence to keep up the child's temperature in the most careful manner, for it would appear that cold and vitiated air have a direct tendency to produce this com-

plaint.* I have found the yellow tinge subside the next day after such treatment, and the whole rapidly vanishes.

Occasionally, however, the jaundice of new-born infants is a very serious and even fatal symptom. Cases of this kind are not met with out of some thousands of instances of disease in children. Dr. West states that no instance has come under his notice at the Children's Infirmary. One fatal case was seen, but not attended by me. It is, therefore, always most probable that the symptom is a trifling one, and will soon vanish; but if the child's health is really affected, and disorder of the bowels or any hæmorrhage takes place, it is then obvious that medical aid is to be immediately required. It is only in the common jaundice of infancy that a parent may venture to give a gentle dose to her child. If the same symptom present itself in after years, it must be the immediate indication of the necessity for further advice.

A malady of still more frequent occurrence, from which, in fact, from some cause or other, few infants

* This tinge of the skin does not generally imply *primary* hepatic derangement,—but appears to be connected with an imperfect fulfilment of the function of respiration. Hence the importance of a properly regulated temperature.

are exempt at the early period of their lives, is what is popularly called the Thrush, and by medical men *Aphthæ*. No complaint of infancy is better known to nurses than the thrush; for it is the almost invariable result of the traditional custom of superadding some improper artificial food to the mother's milk, which the nurse judiciously considers to be a little too weak at first! It reveals itself in the form of numerous small white spots, closely resembling the curds of milk, which will be found on the tongue and angles of the lips. These spots must not be mistaken for curds; and if an attempt be made to wipe them away under that belief, the membrane of the mouth will bleed in consequence of the injury,—and so determine the real character of the spots. Sometimes these spots enlarge, and the mouth of the little sufferer is almost coated with the white deposit. In either case, if the spots do not quickly vanish it will be proper to obtain a medical opinion as to their cause and treatment. Very generally, however, the complaint is not of much consequence, and will yield to very simple remedies.

But as jaundice in the infant may be regarded as only a symptom of a disordered state of the liver, resulting from impeded functions of respiration in

the lungs and skin, so the thrush is a mere evidence of the existence of mischief in the digestive apparatus, generally produced by improper food. The appearance of these spots in the mouth informs the observer of derangement going on in the stomach and bowels, and, in fact, in the constitution generally. It is an interesting fact to the medical practitioner, although its practical import cannot yet be ascertained, that a minute vegetable parasite is often to be detected in the membrane forming the spots of thrush in its more severe form—the *Muguet* of some authors.

The child in whom the symptoms of thrush appear will always be found to be more or less in an ailing, and often in a feverish state, even before it appears: it will be fretful and uneasy, the evacuations will be acrid, sour, green, and too frequent. When put to the breast it will, with avidity, seize the proffered nourishment, but quickly relax its hold, and fall back in the arms crying and in evident pain. In some cases it can scarcely swallow, and will then lie dull and drowsily in the nurse's lap. This is a token of peril, and if assistance be not had early a fatal result may take place.

The treatment of a slight attack of thrush may be very well effected by a parent, always upon the

condition that, if it does not quickly yield, she will call in proper aid. The following simple plan has been recommended by a distinguished writer on the diseases of infancy and childhood—Dr. West ; and I am able to give evidence of its value. It is the careful removal from the mouth, after each time the infant is fed, of all the remains of the milk or other food which it has taken. This must be quickly and gently done by a piece of soft rag dipped in clean warm water. In slight cases nothing more is often required. But another caution, which I deem of equal importance, is to enforce the most absolute and rigorous cleanliness of every vessel containing the child's food, and particularly of the sucking bottle and the leather, or teat protecting it. If the spots are in any way connected with the development of minute parasitic plants, it is obviously of great consequence to prevent any communication of the sporules which propagate them by the implements of the nursery to the child's mouth. All vessels used to hold the child's food should be well *scalded* out frequently, and the leather or teat kept in a little magnesia and water, or in a little lime-water.

The medicinal means to be used by a parent are chiefly in the form of lotions to the mouth, and some slight alterative. Twenty grains of borax dis-

solved in two tablespoonfuls of water, and applied with a soft rag tied to a piece of stick, or by a feather, will generally cure trifling attacks. A little magnesia, soda, rhubarb—in very small doses, or a little chalk, aromatic powder, and grey powder, also in minute doses, will be generally useful: the first if the bowels are confined, and the second if relaxed. But it may be taken as a safe general rule that, if more powerful remedies are required to cure the attack, their administration must be left to proper hands, and aid must be sought. I have used, with much benefit, lotions of dilute nitric acid, slightly sweetened; the nitrate of silver has also been much employed.

Constipation is a simple ailment, and may often be better treated by mechanical than by medicinal means. In infancy, however, a gentle dose of castor oil is the only safe remedy for domestic use: its operation, and, indeed, the natural action of the bowels, may be much assisted by gentle friction over the abdomen. To a child of two years old, a small dose of manna or a fig may be given, or a little magnesia and soda, or brown bread and butter. An injection of a few table-spoonfuls of gruel, with a little castor oil in it, is also useful.* Older children

* The same result may also be obtained by a small suppository of yellow soap.

are often benefited by a portion of a seidlitz powder, or a little senna tea : the latter ought always to be made with cold water, the infusion being allowed to stand for twenty-four hours ; it is then devoid of griping qualities. The medical man is often requested to supply aperient powders for children of a constipated habit of body ; but no plan can be more injudicious, or actually prejudicial to health, than this constant recourse to medicine. By introducing a little brown bread into the diet, by permitting a somewhat free use of ripe and baked fruit, as apples or pears, or by an occasional prune or fig, the tendency may be generally overcome ; but, like all constitutional habits, it is only to be mastered by patient perseverance. It is of great consequence to accustom children to make a regular periodical attempt to relieve the bowels, notwithstanding that it may not be always successful.

Constipation in infancy, of an obstinate kind, should always be submitted to medical investigation, since it may actually arise from an organic defect in the evacutory passage. The same remark also applies to an absence of relief from the bladder. A lady, attended by me, was twice in succession delivered of female children, and in both instances the urethral passage of the infants was occluded

The attention of the nurse was called to the absence of moisture in the cloths used, and this physical obstacle was detected. This difficulty is easily overcome by a simple operation ; but it is a more serious affair when there exists a congenital defect of the rectum.

Diarrhœa arises from such a variety of causes, and sometimes so rapidly passes into a dangerous symptom, that I feel great hesitation in advising any sort of domestic treatment for it. The warm bath, as already recommended, a light milk diet, the removal of all causes of irritation, and a small dose of aromatic powder, with chalk and grey powder, ought to remove any attack not sufficiently severe to require medical assistance. If these fail, the less delay in obtaining further help the better. As cold and improper food are the most frequent causes of diarrhœa in children, the avoidance of these will prevent many attacks in a susceptible child. The first inquiry which should be suggested to a mother by the appearance of diarrhœa should be into the food her child has been partaking of, and her first duty to render it as simple and unirritating as possible. Rice-water made with a little ground rice, to which may be added a little milk, a few lumps of gum arabic, and a little barley sugar,

will form the best drink for children of two years old and upwards. During the whole period of dentition, at which time diarrhoea is often a very troublesome visitor, it will often be found necessary to examine carefully into the diet, and to adapt it to the irritability of the stomach and bowels, which a little cause soon provokes.

If the evacuations assume a slimy character, and particularly if any blood or reddish tinge be perceived, the child requires immediate medical aid, for these generally indicate that an inflammatory attack has supervened, if they follow, as they will repeatedly be found to do, on severe diarrhoea.

I would take this opportunity of always recommending a mother to keep a watchful eye over the condition of the bowels of her children. Frequently the earliest token of their being out of health will reveal itself in the appearance of the evacuations, and a nurse should always be directed to give immediate notice of any other than a healthy state so soon as it presents itself.

It will be found that a severe or protracted attack of diarrhoea is often followed by a very distressing eruption of the skin over the lower part of the body. Even in slight cases of diarrhoea, where the mother has neglected enforcing the most scrupulous

cleanliness, I have seen a degree of most acute suffering result to the poor child from this eruption, which is attended by the discharge of a watery humour from the inflamed and scarlet skin. This may almost always be prevented by carefully washing the child in warm water after each evacuation, and with a soft towel thoroughly drying it. The same simple means will also repeatedly effect its cure. A little goulard-water forms, when diluted, a suitable lotion ; but if the eruption be very extensive, caution must be used in applying it only to small portions at one time. Medical men term this eruption *Intertrigo*.* In bad cases it may even lead to a fatal result if it be neglected, and the child very much debilitated.

Among the numberless other accidents incident to the period of infancy, none is more common than the act of vomiting. Generally, this is of little moment. The child is, from the peculiar condition of its stomach, easily excited to its occurrence, and it is often a natural relief from the presence of part of a superfluous meal. I entertain little doubt that indiscriminate and irregular suckling is the cause of the continued vomiting of many children in early infancy. Nurses entertain the idea that it is an

* *Erythema intertrigo.*

indication of health ; but it may be more frequently regarded as one of repletion, and, occasionally, as a token of coming disease. Vomiting not unfrequently occurs when a mother has been away from her child for a longer period than usual, and the child has been permitted to fill itself to repletion. Violent sickness then ensues, and sometimes becomes extremely severe, the infant being shortly after quite unable to keep the smallest quantity of milk on the stomach. The same result also often ensues after improper food has been administered, and, occasionally, after exposure to a hot sun.

A little attention will generally subdue this symptom if it be unattended with others indicative of intestinal derangement. By withholding the breast for a few hours altogether, and giving only a few teaspoonfuls of cold barley-water, the stomach will regain its tone, and the child may be cautiously restored to its parent, at first only permitting a small quantity to be taken. If the bowels are disordered, and violent vomiting forms a part of the attendant symptoms, professional aid is necessary.

“Sickness in infancy,” observes Dr. West,* “is not always a solitary symptom unattended with

* Diseases of Children, p. 365.

other indications of gastric disorder. It not unfrequently happens that, though the child does not lose much flesh, yet digestion is ill performed, and various dyspeptic symptoms appear which would be troublesome rather than alarming, if it were not that they are often connected with the strumous diathesis (scrofulous temperament), and are the first indications of a state of constitution in which, after the lapse of a few months, pulmonary phthisis is very apt to supervene." This important statement I am fully able to support. It deserves notice also that this condition may be induced by over-anxious care, and by keeping the infant too long in a hot and ill-ventilated room. It is a case requiring medical assistance.

Very frequently, even in infancy, children suffer from indigestion. The eructations are extremely sour and even offensive, and the evacuations are unhealthy in every respect—in colour, consistence, and odour. The milk is often vomited, and has a peculiarly sour penetrating odour; the child is feverish, the tongue furred, and it is fretful, and little soothed even by application to the breast; for, though quiet there, it almost immediately after removal cries and writhes in pain until it is sick, when it seems to be relieved. The bowels are

sometimes confined, at others relaxed. If these symptoms appear in a child fed by hand, a strong presumptive evidence is afforded by them that the food administered is improper, and such is often found to be the case. Acidity of the milk given will produce this result, or the use of farinaceous food, which will often be found in the evacuations undigested, and, in fact, unaltered. It will be necessary to ascertain these points, and to apply the proper remedy. But if administration of medicine is rendered necessary by the continuance of the symptoms, it requires such a careful and discriminative application of the remedies that no unskilled person should attempt their use. A little magnesia and rhubarb, with a grain of grey powder, will be generally useful in very slight cases. Change of air is also occasionally a remedy of wonderful power. Very often the symptoms of indigestion in infancy are the result of derangement of the health of the parent, and it is her duty in such cases to submit to proper treatment.

When symptoms of indigestion occur after weaning, as they very repeatedly do, they are often a result of the attempt to feed the child with farinaceous food, or some other unsuitable compounds, instead of milk and water. In this case, the right

remedy is a close adhesion to the rules already laid down as to diet. If the symptoms do not amend, then medicine is necessary, and advice must be had.

Children of riper years are very frequently troubled with derangement of the same kind. The disorder is the constant result of indiscretions in diet, and both parent and child undergo much suffering from a cause which might have been very easily prevented. A dose of alterative medicine—of rhubarb and soda, or of rhubarb and grey powder, with a grain of ipecacuanha powder, followed by a portion of a seidlitz powder, in the morning, will pretty constantly relieve these symptoms. If there be diarrhoea, a gentle dose of castor-oil will remove the irritant food which has produced it and the other symptoms. Many children are, I am convinced, constantly suffering from dyspepsia; and although its existence does not much interfere with the child's general health and appearance, it cannot be regarded as a proper or desirable condition. Attention to diet will do much in such instances; but this is often insufficient to remove the ailment unaided by proper remedies.

The whole period of the wonderful process of dentition comes very properly under view in the present chapter; for, although this is a perfectly

natural and necessary part of the child's physiological history, we have every reason to know that it is a time fraught with peril, and attended with a variety of contingencies which are calculated to give anxiety to the parent and suffering to her child. The health of all children should be most carefully watched at this period. It has been found that, out of every 100,000 children born in London, 1,554 die during, and apparently in consequence of, teething. It deserves, in fact, the most particular attention, that the children of those resident in towns suffer immense mortality while teething over those resident in the country. Thus, while out of the same number of population the deaths from teething alone were 616 in towns, they were only 120 in country districts.

The value of such a fact as this can scarcely be overrated in practice. It is a faithful and unmistakable indication of our duty in every case where the child is suffering, and it is possible for the parent to leave home, to advise change of air as a remedy of the most valuable kind. If ordinary remedies do little good, this may be almost always tried with benefit. Even when it is not possible to effect a change of air, much good may be done by keeping the child much out in the air during the whole period.

Another maxim of importance is to avoid any change of diet at the period when the process is in a state of activity. The teeth do not all appear in uninterrupted succession. The seventh month is about the average time for the first, and their order of succession is ushered in by the appearance of the incisors of the lower jaw, then of the upper, to which succeed the molar or grinding teeth, then the "eye" or canine teeth, and the back molar complete the milk teeth. But it is a constant mistake to suppose that the teeth, as soon as they once appear, continue to do so until all are completed, without any cessation of the process. It will be found, on the contrary, that often a few teeth make their appearance, and then the phenomenon seems to have ceased, for no more present themselves; and such intervals of rest will not unfrequently be noticed during the whole period. These pauses are of great consequence to the child, and the judicious selection of one of them for weaning, at the right period, will form a very valuable part of a medical man's services during a child's teething. Whilst a child is actively cutting its teeth, nothing can be more hazardous than to attempt to wean it, for the time is naturally one of much constitutional excitement, which might be

aggravated into positive disease by such a proceeding. We should wait for the pause which indicates its subsidence for the present, and employ the interval in adapting the child's diet to its condition.

It should be always remembered that the evolution of the teeth is only a part of the phenomena then taking place in the child's body, and regard must be constantly had to whatever circumstances are likely to affect its general condition. The diet, exercise, clothing, temperature, and state of the bowels should be the subjects of our care; for if we can arrange these so as to leave the child with nothing to trouble it but its teeth, we shall generally have little difficulty with them. If the child is very thirsty, it must not always quench its thirst at the breast: this were to induce, as a certain consequence, a disordered stomach and bowels. A little warm barley-water may be given. If there is much heat of the mouth, the water may be cooled, and the child permitted to suck it from the bottle. A warm bath at night will prove of great service if the bowels are disordered.

Such remarkable relief is occasionally derived from lancing the gums, that parents should always leave it to the medical attendant to decide as to its necessity. There can be little question that the

gum lancet is often used without much judgment, either at the solicitation of the anxious parents or by the advice of friends, and even occasionally by the medical man. At the most it is simply an unnecessary infliction of pain, which is not to an extent likely to do any harm; still it were to be wished that even this might be spared to the little sufferer, and that this instrument should be employed only upon clear indications of its use. During such a pause as has been described, when nature seems for a time to rest from developing the teeth, it is difficult to conceive of any circumstances justifying its use. But when a tooth is pressing toward the surface, when the mouth is hot, the child feverish and fretful, and excited, then a free incision into the gum will often still these symptoms like a charm, the tooth will be through in a day or two, and the threatened storm pass away.

The use of hard substances for the child's mouth during dentition is to be deprecated; but relief is often apparently given by biting a soft elastic substance, as an India-rubber ring.

The period of teething is often marked by a number of minor ailments, which sufficiently indicate the state of general excitement into which the body is thrown at this period. Of these, that which

often gives parents much concern, from the deformity it occasions, is an eruption on the face, which is called *Eczema*. Several children with this disease are at the present moment under my care, and in each of them the hideous aspect of countenance it has produced is extremely remarkable.* It is a consolation, however, to know that this, if not permitted to be scratched, speedily disappears, and the skin again assumes its natural appearance. Such eruptions often extend to the head. The less they are specially treated, when a result of dentition or connected with it, perhaps the better. They appear a sort of safety-valve, which it might be dangerous to close; and time, with a little patient and judicious management, will bring about the cure.


Another disagreeable attendant upon this process in delicate, and more particularly in scrofulous children, is a constant running either at the eyes or ears. This discharge is often alternating; that is to say, if it ceases at the ears it will commence from the eyes, and the contrary. Great caution is necessary in treating these discharges as well as the

* A Daguerreotype of one of these lies before me. In ten days after it was taken, not a trace of the frightful eruption remained.

eruptions just alluded to, since their sudden suppression may be followed by the most alarming threatenings of disease in the brain.

Nurses very often assure us that many children cut their teeth with a cough, and we are able, on this occasion at least, to support the conclusions of their experience. Both diarrhœa, and also a sort of flux from the mucous membrane of the lungs, are not unfrequent attendants on dentition; and the constancy with which they appear and subside as the teeth present themselves and pierce the gum, indicates a connection between the one and the other, which deserves attention. Every natural discharge of this kind, whether from the mucous surface of the bowels, lungs, mouth, or eyes, is, within certain limits, a safeguard during dentition, and medical men are always reluctant to offer more than a few general rules of management for their treatment. Too much care cannot, in fact, be exercised in a thorough analysis of a child's condition when out of health, and every contingency, possible or probable, requires the due and calculating consideration of the professional attendant.

With these few observations we dismiss the subject of dentition. The most healthy children are often in much suffering, and sometimes almost in



peril from a variety of circumstances attending its progress; and delicate children require close watching and attention. I have endeavoured to give such directions for management at this time as will be found sufficient to guide a mother in all ordinary circumstances, and the appearance of anything more serious than has here been intimated should be regarded by her as a token of medical aid being required. Since all children are fretful, excited, feverish, and somewhat out of order at this period, it is the duty of a watchful parent to be more than ever cautious about their diet, and if she be suckling, about her own health. The use of the warm bath night and morning, the thorough ventilation of the nursery, abundance of exercise in the open air, and, if any circumstances occur to call for it, a change into the country, are means of prevention, and, indeed, often of cure, which no mother should neglect, and which few who have paid attention to the hygienic management of this period of a child's life forget to prescribe.

The eruptions of the skin not attended with fever may be considered as a part of our present subject; but, as a general rule, their management is so various that I prefer merely saying, that a mother will find it generally the best and quickest method

of banishing such eruptions to obtain proper aid for her child. Young mothers are frequently much concerned at a simple little eruption called red-gum,* which is common in newly-born infants, and is very generally connected with some derangement (commonly acidity) of stomach and bowels. It is without danger, and soon vanishes if the diet is attended to. The eruptions which appear on the head of children are, perhaps, the most annoying of a parent's minor trials in the management of her children. All that can be here said on the subject is to urge the most scrupulous cleanliness, and copious ablutions of the head morning and evening with warm soap and water. Slight cases are often cured by no other means than this, while bad cases often defy the most skilful efforts of medical men for a prolonged period. It may be just necessary here to repeat the caution, that if these eruptions are evidently connected with active dentition they require much care and prudence in their management, and should, on no account, be sought to be suddenly repressed.

It is proper, before putting an end to this chapter, to say a few words about the ear-ache of children,—and those words of caution rather than

* *Strophulus intertinctus*.

direction. Young children are by no means unfrequent sufferers from this most distressing malady, and appear almost distracted by the acute suffering which it occasions. If they are so young as to be unable to indicate the seat of pain, it is by no means improbable that the parent and nurse may altogether mistake its locality, and attribute the child's agonies to some cause very wide of the real one. If the child is able to speak, it will always tell the attendant the true seat of its suffering, and even infants will be found to lie with the head most constantly on the affected side. Ear-ache is by no means a simple and harmless affair in a child when it is attended with any severity, and the most acute and agonizing suffering may be only a part of the bad results attendant upon it. Disease of one of the bones of the head, attended by the most formidable and even fatal consequences, is not impossible. Until aid is obtained, some relief may be afforded to the suffering child by putting a very soft bread poultice into the ear, and by laying over it a bag of camomile flowers wrung out of hot water. The moisture and warmth give great ease generally, but the pain does not often, in acute attacks, subside altogether until a discharge of matter takes place, when relief is generally obtained at once.

The disorder appropriately called the "Night Terrors" of young children also deserves mention in this place. It is an alarming and extremely distressing occurrence, and has received attentive study from several distinguished medical writers. Soon after the child has been put to bed a violent shriek is heard, which penetrates into every apartment in the house, and on entering the room where the child sleeps, the little sufferer will be found sitting up in bed in a state of the most painful mental agitation and distress. In a little while this subsides, and the child falls asleep again. This excitement is generally dependent upon some disturbance of the alimentary canal. It is a not unfrequent result of the use of improper food, and also often occurs during dentition. A little alterative and aperient medicine, or dose of castor-oil, or of rhubarb with a little soda, and the alterative powder before mentioned, consisting of three grains of rhubarb and of soda, one or two of grey powder (hyd. c cretâ), and one of ipecacuanha powder, will generally suffice to remove the cause of irritation, and the night terrors, with all the dreadful phantoms which accompany them, will pass away. The domestic management of a child subject to these screaming fits, as they are sometimes called, is not

of less importance than its medical care. The diet should be carefully regulated, and it would be well that a somewhat longer period than usual should elapse after tea (milk and water sweetened or thin cocoa) before going to bed. The nurse should not be absent from the room, in which a light should be kept burning. There should be no curtains to the child's cot, and on its starting up it should be gently and affectionately spoken to, and soothed to rest. To speak to or treat with severity a poor little child subject to such attacks might lay the foundation not only for their constant recurrence, but for serious organic mischief in the brain.

Tooth-ache is also a very troublesome attendant on the career of some children. I am acquainted with no remedy so simple or valuable as a spirituous solution of tannic acid, the value of which has been known to me for many years. By a pipette, or some similar apparatus, a few drops are placed in the hollow, and relief is generally immediate. When decay of the teeth takes place at their points of lateral contact, it deserves the trial of the removal of one tooth on each side of the jaw, since it would seem not improbable that the lateral presence of the tooth was the cause of their decay.

In concluding the present sketch of a few of the

more prominent among the various minor ailments incident to the periods of infancy and childhood, I cannot offer more valuable advice to a mother than to direct her never to delay, if possible, until really urgent symptoms arise before she consults her medical attendant as to the state of her child. The experience of every medical man could supply numberless examples of the danger of procrastination in the diseases peculiar to children. Some of the most painful instances of the fatal result of such delay present themselves as I write these lines. The universal motto of the science of the healing art breathes this spirit, and teaches us that while it is generally easy to stay the beginning of evil, if we wait for its full development the powers of medicine are proportionally enfeebled.

CHAPTER VIII.

THE MORE SERIOUS ILLNESSES OF CHILDREN.

THE diseases concerning which we propose in the present chapter to lay down a few rules of management are such as, from their nature, do not admit of domestic medical treatment, and it will consequently be little necessary to advert to that part of the subject. The intention here in view is to enable a mother to recognise, as early as possible, the true features indicative of an attack of serious disease impending over her child, or beginning to develop itself in its body, and, as far as simple hygienic rules go, to assist her in the conduct of affairs during the continuance of its illness. It is very important, however, here again to state the fact, that there is scarcely a single ailment of those in the preceding chapter called minor which may not become of serious moment, if neglected. Diar-

rhœa may become inflammatory, or proceed to such an extent as to destroy by exhaustion. The retrocession of a simple skin eruption may be followed by fatal mischief within the skull. In short, although these ailments are at first simple, and very generally of little importance, yet extended experience has shown that, after a time, a new combination of the elements of disease may occur, and the aspect of the whole case undergo very serious deterioration. There is, therefore, no such thing as an arbitrary definition of children's diseases into those of minor and those of major import, nor have I made this attempt. All that can be said with entire safety is this, that most commonly the ailments adverted to in the last chapter are of lesser, while those to be spoken of in the present are of greater, consequence. Even the more serious diseases have often such mildness of type that they might almost be regarded as minor ailments, were it not for the constant risk during their continuance of the incursion of some more formidable symptoms.

I cannot help, in this place, giving expression to my regret that the peculiarities characterizing the invasion and existence of serious disease in children have formed so small a part of the ordinary studies of the medical practitioner. Their investigation

is, it must be confessed, one of peculiar difficulty, and can only be successfully carried out by those who, having a love for children, can first commend themselves to their affection. No medical man can be ignorant of this fact; and, to use the words of an eminent physician,* many "abandon in despair the study of children's diseases. Some practitioners," he continues, "never surmount these difficulties (of investigation of diseases in children), and the diseases of children are consequently a sealed book to them. After a time they grow satisfied with their ignorance, and will then, with the greatest gravity, assure you that the attempt to understand these affections is useless. There is a certain tact necessary for successfully investigating children's diseases."

Even a parent, to whom a child will naturally, when it is capable of doing so, reveal the seat of its malady, will often be wholly unable to learn it, and has the painful anxiety of watching her infant's agonies without any clue to their cause. How much gentleness of manner and quietness of voice are consequently needed in a stranger to whom is committed this difficult and yet essential investigation! Any medical man who, with an abrupt demeanour

* Dr. West, loc. cit. p. 3.

and elevated voice, seeks to find out the seat and nature of an infant's disease will be baffled in the attempt, and can only guess at its real character. Not long ago there appeared in the pages of a popular caricaturist an illustration which, in a forcible and amusing manner, set forth the consternation in the nursery on the arrival of the doctor, the morning after a juvenile feasting. That grave and awful-looking personage had impressed with terror all the children within sight; and one poor child, which was forcibly drawn before him, appeared little disposed to yield much information as to its state of health in reply to his inquiries. It is not meant that this with older children is an every-day occurrence; but with children from infancy up to four or five years of age, it is one of continual notice.

To exercise a loving, gentle, and sympathizing spirit, to address the little sufferer in a quiet and soothing voice, yet to speak first to any present rather than to it, in short, to use a little of that peculiar tact which no words are capable of defining, and which cannot be conveyed to those who are not in heart friends to children—these are the qualifications, necessary to a due investigation of their diseases; and unless they exist, the medical man will be little

able to penetrate the difficulties with which they are surrounded.

The whole study is one in which a wide departure from the ordinary plans of interrogation is necessary. Frequently the child cannot, and not unfrequently it will not, speak; or if it does, only the most vague and unsatisfactory replies can be elicited.* The practitioner is consequently compelled to rely much on physical diagnosis; on what he can hear, see, and touch rather than on what his patient expresses. He will need all his patience and gentleness, all his tact and observation, to make himself thoroughly master of the case; but if he first be successful in gaining his little patient's confidence, the rest is not often difficult.

If it has been necessary for me in other parts of this book to treat with some irreverence the traditional observances and maxims of nurses, and, it may be, of experienced bringers-up of families, I would hasten here to express the high value that I entertain of their actual observations of the sick

* Many children, if the finger be gently laid on any part of their body, will say, if the inquiry be made, that pressure is painful to them. To discover the real seat of tenderness is consequently impossible, without the exercise of a certain tact in their management.

child. I consider the testimony of a nurse or mother to certain symptoms of disease in the child as of equal if not superior value, in many instances, to the information derivable at the time of a visit. Upon the intelligence and fidelity of such statements the accuracy of our diagnosis frequently depends; and in the concluding chapter of this work I propose to direct special attention to this part of duty in the sick room. It may merely here be remarked, that, when properly instructed, there can be no better observer of symptoms than the mother of the little creature in whom they present themselves. And, in detailing the preliminary symptoms of some of the more serious diseases in children on the present occasion, every hope is entertained that parents will be able to detect their incursion as early as is necessary to their child's well-being, and to seek aid accordingly.

The first of these maladies, and one of those which presents itself early in the life of children, bears the formidable name Convulsions.* It is, in sad truth, a serious and often fatal symptom, and well does it become a mother to be watchful with regard

* It is right to explain the fact that convulsions is merely a symptom of disease or diseased condition. It is not itself the disease, but its token.

to its occurrence. I have endeavoured to show in a preceding chapter, that there is a physiological cause for the extreme prevalence of convulsions in early life, arising out of the peculiar condition of its nervous system—the predominance of the spinal over the cerebral systems. Statistical returns indicated also the great fatality of this symptom. As much as 74 per cent. of the deaths occurring in the first year of life from diseases of the nervous system are found to be produced by convulsions. It is confined chiefly to children under ten years of age, but is immensely more frequent in the first year, its frequency gradually diminishing up to maturity.

After or during a slight attack of diarrhoea, or after an indigestible meal, if a mother attentively watches her child, she will observe a somewhat uneasy movement of its body, accompanied by a twisting of the mouth, followed by one of those beautiful smiles stealing over the face which have been poetically ascribed to the whispering of angels. The eyelids will be half closed, and the upturned eyes slowly move from side to side. The infant is soon after sick, and, the stomach being relieved, the same symptoms do not again present themselves until after the next meal. These symptoms should be

watched, and will occasionally be found to pass into others of somewhat more serious import. The breathing becomes difficult, a dark mark surrounds the mouth, and the child awakes crying and alarmed. These symptoms are called by nurses "Inward Convulsions, or Fits," and are very repeatedly met with in children whose dietetic management has been neglected until dyspepsia has come on. They are also often caused by an accumulation of wind in the intestines, and subside immediately on its dispersion. In themselves, these symptoms present nothing to alarm the parent; but they should make her watchful to remove their cause, and their continuance will require that she should obtain advice for her child, since they may be the first indications of a coming attack of convulsions. Under right management they very generally vanish in a few days, after which attention to diet will prove the best means of prevention of their recurrence.

The invasion of an attack of general convulsions is marked in a yet more decided manner, if the preceding symptoms are unheeded. "When we see the thumbs drawn into the palm either habitually or during sleep; when the eyes are never more than half closed during sleep; when the twitching of the

muscles is no longer confined to the angles of the mouth, but affects the face and extremities; when the child awakens with a sudden start, its face growing flushed or livid, its eyes turning up under the upper eyelid, or the pupil suddenly dilating, while the countenance wears an expression of great anxiety or alarm, and the child either utters a shriek, or sometimes begin to cry,"* there is serious cause for apprehension, and an attack of general convulsions may be very imminent.

It is a happy thing if, in rearing up a large family of children, a parent may have never been called to be a suffering witness of a real and severe attack of general convulsions. Yet, if such should occur, some of the mental agony of a mother may be relieved by assuring her that her child, though convulsed in every limb, and externally appearing to present the most violent indications of pain, is, in fact, in a state of total unconsciousness; whilst the fit lasts, it has no sensations of pain. The symptoms of a fit need not be here detailed. Its duration varies much with its cause: it may be over in a few minutes, and it may be prolonged for more than an hour. A convulsion fit is not often fatal on

* Dr. West, loc. cit. p. 19.

its first occurrence, yet it sometimes is so. Not long ago, the parent of a little boy who had been under my care for hooping-cough ran in haste to summon me to his child ; but, although immediate attendance was given, the child had died in a convulsion fit before my arrival,—a result of cerebral congestion of an extreme kind supervening upon the attack of coughing. The termination of many exhaustive diseases in early childhood is also marked by convulsions, which in such cases are generally fatal. But the convulsions arising from disorder of the alimentary canal, or from dentition, are not often of this fatal character.

If an attack of convulsions comes on, until medical aid arrives, all that a mother can do is to put the child up to the arm-pits in a warm bath, to sprinkle cold water in the face, and to apply cold to the head. In slight cases, the fit will often be subdued by this means alone. During the fit, care must be taken that, in the convulsive struggles of the child it does not injure itself by contact with hard substances. After being taken out of the bath, it should be quickly dried and put between the blankets all but the head, on a horse-hair mattress, the head being slightly raised by a pillow not too soft. After recovery, and desistance from medical care, too much

precaution can never be exercised in the total avoidance of any kind of irritating food; and it will be well to obtain definite instructions on this subject, and on the child's general management, from the medical practitioner before he takes his leave. The state of the bowels must always be carefully attended to. With every year of life the tendency to convulsions will lessen, and ultimately the parent may have the satisfaction of seeing her child safe through this and every peril peculiar to infancy and childhood.

There is an indication of importance, and, occasionally, of coming evil, to which the attention of those who have the charge of young children requires to be directed. This token is violent vomiting. Vomiting may be, perhaps most generally is, a harmless symptom, indicating merely some disorder of the stomach, or repletion, and from its constant occurrence in infancy, as we have before observed, little notice is generally paid to it. But the vomiting in these cases is the result of some obvious disturbance, and need not, therefore, excite alarm. When, however, no cause whatever exists for it, when it continues with little intermission, the stomach rejecting everything swallowed, and the child being much distressed by the retching and incessant efforts to unload the

stomach without any effectual relief being obtained, all such vomiting is suspicious, and may be the precursor of serious disease of the brain. It needs not with older children to point out the obvious duty of a parent in such a case, for the alarm excited will suggest the immediate call for help; but in infancy there is much reason to believe that it is a symptom frequently disregarded, probably because its serious import is altogether unknown.

If there be the least reason to suspect the existence of hydrocephalus, popularly called water in the brain, then vomiting and loathing of food and drink are most important indications. This formidable malady, so destructive to young children, and, in some of its forms, so little amenable to treatment, is a painful trial to any parent in whose family it may make its appearance, and the insidious manner in which it progresses to a fatal termination is well calculated to mislead even the most experienced. Medical men are well aware that the disease is generally, in its chronic form, of slow accession, its tokens being often only perceptible in a general failure of health; and since even they are liable to be mistaken in their diagnosis, it is not to be expected that a parent unskilled in this science can succeed when they fail.

But acute hydrocephalus generally excites attention by its precursory symptoms. When a child complains of much pain in the head, placing its hand there, or of drowsiness, accompanied with feverish symptoms or dizziness, and distaste for food or play, with occasional vomiting, a mother's watchful care will be much needed, for these are the very frequent evidences of the coming on of this fatal and distressing malady. I forbear from exciting a needless pain by a description of the more fully developed disease: would it could be added, that it were so far under medical control as to give a frequent reasonable prospect of recovery! It is consoling, however, to state that, in some instances, by judicious care, the disease may often be warded off other individuals of a family in which it may have made its appearance.

This disease has a remarkable tendency to develop itself in the families of those who are consumptive; and the most painful instances occasionally present themselves to my notice, in which every individual of a whole family of children has been swept off by this complaint. The advice to be offered to the parents of a family in which this disease had made its appearance, would be their immediate removal to some suitable place in the

country, far from the excitement and irritation incident to a residence in town. The most scrupulous attention must be paid to due regulation of the diet, to the clothing, and general hygienic management of the children. For infants, prolonged suckling, not by the parent, but by a healthy wet-nurse, appears to offer the only prospect of their attaining vigour in childhood; while the food of older children should be at once as simple and as nutritious as possible. Such children are, in the strictest sense of the term, weakly children, prone to illness, and easily disturbed by little causes of irritation. Their physical education consequently becomes a matter of the most thoughtful care and prudent arrangements, and must be much under the eye of the medical man; otherwise, some latent symptoms of mischief may acquire such intensity before he is called to the aid of the sufferers that he has then little power left of materially benefiting them. From the prolonged administration of cod-liver oil, in conjunction with the iodide of iron in syrup, I have found benefit, sometimes of a remarkable kind, in the treatment of such children.

Those diseases, which belong to the zymotic class, such as the eruptive fevers, hooping-cough, &c., constitute, like the two preceding subjects of our

notice, maladies peculiar to infancy and childhood in a great measure, although, occasionally, they appear in later life. These diseases are constantly expected by parents, and it is a just matter of congratulation when every trial has been safely passed. They are justly regarded as important diseases, and their right management is essential to perfect recovery. They are, however, at the same time so necessarily the proper subjects for medical interference that, were I to offer advice on their medical treatment, it might be more than questionable whether such would be followed, and still more improbable that it would be adapted to every variety of symptoms which might present itself during their course.

The most formidable to parents of these eruptions is small-pox, and it was justly to be dreaded before the discovery of vaccination. Even now, an attack of small-pox occurring after vaccination is very common, but is generally much modified and its intensity subdued. I need scarcely, therefore, urge upon parents the absolute and urgent necessity of early vaccination of their children. Probably there are few educated persons disposed to doubt the safety afforded by this simple means, and the perfect harmlessness of the operation when properly

managed. But there is a vast proportion of the poor who neglect it, and whose children are swept away in large numbers by the disease.*

The symptoms of an oncoming attack of small-pox are not always to be distinctly recognised from those of other eruptive fevers. A child will complain of being cold and shivering, and in a little time after will be found to be flushed with heat, and vomiting with some severity; the skin is hot; it complains of the head-ache, and is often drowsy and listless; the pulse is rapid, and the tongue furred. Probably, for several days prior to this, the child will not have appeared quite well. In about forty-eight hours after the appearance of the symptoms described, a few red spots are seen on the face and forehead: these are the first harbingers of the future eruption.

The right domestic management of children during an attack of small-pox is not of less, nay is almost of more, importance than the care of the

* An ingenious method of vaccination has lately been suggested, which seems likely to be useful. It consists in raising a minute blister not larger than a pin's head on the arm to which, instead of the lancet puncture, the vaccine virus is to be applied. With some excitable children this mode seems to offer some advantages over the more formidable one of using the lancet.

medical man ; for if it be misconducted, all his efforts may be fruitless. The room in which the child is placed should be large and airy, occupied by itself alone, no other person being permitted to sleep in it, and a couch only being placed for the accommodation of whoever has the nightly charge of the little patient. It should be most thoroughly ventilated, and kept as cool as possible, every provision being made for the free and abundant entrance of pure, cool, fresh, and scentless air. It should also be somewhat darkened ; but this must by no means be attempted to be accomplished by closely drawing curtains around the child's bed : let there be no curtains rather than that there should be any obstacle to the free circulation of air around the child's heated body and face. Some medical men prefer to make the room quite dark ; but it is ordinarily sufficient that it should be pervaded by a soft and very subdued light, for the means employed to darken it are often of a kind calculated to impede due ventilation. The diet must, during the early stages, be low and unirritating—diluted milk and water occasionally, with as much barley-water as the child wishes for. The bed-clothes must not be thick or heating, and it will often be found useful to employ a wicker-cradle, so as to permit the whole

of the little patient's body to be surrounded with air. Unless under medical direction, it is better to be content with a close observance of these few general principles. If cold is to be applied to the head, or if more stimulating diet is necessary, or if warmth not cold is indicated, only a medical man ought to direct the change: for all ordinary cases, the foregoing rules are applicable.

As the disease advances, a change of treatment is often required, and instruction should be sought. The time of decline of the disease and of convalescence needs all a mother's care and a nurse's watchfulness. The eyes may require to be often bathed, and the intense itching of the skin to be allayed, and in young children it will be needful to keep a vigilant but gentle restraint upon the almost quenchless desire to scratch the pustules. If this be permitted, the child will, undoubtedly, be marked in those spots, and a most annoying ulcer will be there formed. Cold cream, which is a mixture of oils and water, is the most soothing and delightful application for the relief of this itching; but it should be kept very cold, and not at the temperature of the room, otherwise it will not give much relief. By tying the hands in a piece of soft cambric, the power of scratching may be generally restrained. The

moral management of the patient is, perhaps, as arduous as any portion of its care ; but affectionate, gentle, firm, and soothing language has wondrous efficacy in stilling the fretful impatience of the poor sufferer.

The question is often anxiously put as to whether there exists any means of preventing disfiguration from small-pox. Several means have been adopted with varying success. The patient has been kept wholly in the dark, every pustule has been pierced with a gold needle charged with lunar caustic, or this salt has been applied separately to every one ; gold-leaf has been laid upon the skin, and various ointments have been tried. All that can be said is that, probably, some of these means are useful ; and the most likely is that adopted occasionally on the Continent—the application of mercurial plaster or ointment to the pustules on the third day after the appearance of the eruption. Collodion has also been successfully used.

The vaccination of children may require a few observations in this place. The best time for its performance is at the third or fourth month of infancy. But if there be any unusual prevalence of the epidemic, it may be done at one month or six weeks : in ordinary cases, the former are preferable periods. Vaccination should not be per-

formed during the existence of any constitutional derangement whatever. Active dentition, an eruption on the skin, or some degree of febrile excitement should contra-indicate its performance. It is best performed from a healthy child, the fresh lymph being used. It is better only to vaccinate in one arm, as the place can be more readily protected from irritation or injury; and I prefer to make three, or at least two, punctures in the arm selected, or to raise a small blister spot, as before described. It will be necessary, by a piece of tape, to tie up the dress, so as to avoid rubbing the place. A little aperient medicine is often useful at this period, but will, of course, be referred to the discretion of the vaccinator.

Much has been said on every side of the important question of the expediency of re-vaccination, and it appears to me, after an examination of the evidence, that there is prudence and safety in its performance, and as such I would advise its being done on all children more than ten or twelve years of age. A great mass of evidence shows its protective power, and the operation is so simple and painless that few, convinced of its importance, would refuse to submit to the mere annoyance it may occasion. There can be no question that small-pox

has increased of late years, and it is, therefore, very desirable to adopt every precaution against it which has the sanction of medical experience and the support of statistical data.

It is to be regretted that, as yet, no efficient protection has been discovered against measles and scarlatina. It appears indeed doubtful, whether, in the last disease, some degree of protection is not afforded by the administration of small doses of belladonna. As this is a subject on which the medical practitioner is frequently consulted by parents anxious for the preservation of their children during a scarlatinal epidemic, it may be desirable to quote the following facts from an essay by an American physician.* During the prevalence of the epidemic in one of the southern states, a Dr. Hardy gave notice that he would prepare the belladonna for all who wished to try the experiment. Anxiety, of course, led many parents to avail themselves of this their only hope, and many took the medicine. An account was kept of two hundred and forty children who thus took it, and of that number less than half a dozen had the disease, and they had it very mildly. One poor woman with a

* Dr. Porcher, partly published in vol. iii. of London Journal of Medicine, p. 1020.

family of sixteen children used it carefully according to directions, and it was remarked that her family alone escaped, while hundreds of other children were attacked. A vast collection of somewhat similar facts has been made; and if evidence of this kind has any weight at all,—which some are disposed to deny, it must be confessed that a certain degree of immunity is afforded by belladonna. Such, at least, is the opinion I have been led to form on the subject.

The administration of this drug, if its use be deemed advisable, must be committed to the medical attendant; and it is altogether unjustifiable to give directions for that purpose to any person unacquainted with the operation of this most powerful, and even dangerous, medicine. The doses given are minute; but they produce, in about ten days, an eruption over the skin bearing a remote resemblance to that of the disease itself: but this efflorescence is not an invariable result, nor apparently necessary to the protective influence of the belladonna. Many eminent members of the medical profession are, altogether, sceptical as to its value. But, since no instance has yet occurred in which its administration has done harm, when properly conducted, and since an extraordinary number of facts have been

adduced which show at least that an immense proportion of those who used it did not take the disease, it appears to me there is sufficient ground for its use, whenever the malignancy of the type, or other circumstances, appear to call for some means of protection from scarlatina.

Medical men are often called upon to give counsel on another subject of much difficulty, connected not only with scarlatina, but also with measles and whooping-cough, upon which I will venture to offer a few remarks. A single child is taken ill out of a family of five or six; and for a day or two it is doubtful what the disease may become when fully developed. At length it is revealed, and the burning scarlet skin and sore throat declare that this is an attack of scarlatina.* What is to be done with the other children? Are they all to be sent away, or permitted to remain at home? If we could be sure that the disease was not latent in any of them, then we might entertain no doubt about sending them away into the country, and thus isolating its attacks. But this assurance is impossible: no one can tell

* It will be observed that throughout the term "scarlatina" is used, not because it signifies a different disease from scarlet fever, but simply for convenience.

whether any, or how many, are already in process of preparation for its development.

The following circumstances would lead me to advise the removal of the other children:—1st. If any of the unattacked were delicate, or already the sufferers from organic disease. 2nd. If the children were under two years of age. 3rd. If the type of the disease was bad and accompanied with great prostration and typhoid symptoms. In such a case, even if the disease appeared, how infinitely better that it should do so in the pure atmosphere of country life than among the depressing influences of towns!

On the other hand, the fulfilment of the annexed indications would lead me to recommend the opposite course:—1st. If the type of the disease was mild. 2nd. If there were no child under two or three years of age. It may be considered a great mercy to a family when the youngest is four or five years old before an epidemic breaks out among its members; for it is a notorious fact that, under those ages, the mortality of those attacked is very frightful.

Many obstacles often present themselves, even when it is most desirable for their own sakes, to send the children yet remaining well away from home, and to none more so than to the very

youngest of their number—the infant at the breast or the child in arms. How often are medical men called to witness that maternal struggle which takes place when the sick child must be avoided, and even quitted,—left it may be to die; while duty to her infant and to her other children calls the mother to take her departure for a time from the house into which these dread visitors make entrance. Happy is that parent who, when such a trial befalls her, is enabled to leave her suffering child in His hands who first gave, and can still safely preserve, that precious life, though she may not be there to minister to its comforts or to smooth the uneasy pillow!

Some medical writers have occasionally recommended the advisability of even courting the attacks of scarlatina when it appears in a mild form. It would not seem to me that, under any circumstances, this can be either necessary or desirable. The path of prudence, as it appears to me, is to await rather than to anticipate the arrangements of Divine Providence.

Returning from these digressory remarks, which have, however, an important connection with our subject, I proceed to mention the general indications of a supervention of scarlatina. Generally,

the first symptom is a fit of vomiting, the child afterwards becoming very hot, feverish, and complaining of head-ache. There is often also a little soreness of the throat, and the child will say that it hurts him when he swallows, placing his hand on the neck under the angle of the jaws. In mild cases these are the only precursors of the attack, and in twenty-four hours the rash appears, and first on the breast and neck, and also on the face. When the throat is much affected from the first, there is reason to expect that variety of scarlatina which is characterised by the severity with which it seizes on this part of the child's organism.* In very bad forms of this terrible disease, a sentence of death seems almost passed upon the child from the first, and the early failure of the pulse and morbid coolness of the skin give warning counsel to the attendant as to his estimate of the result of the case.

Immediately on recognising the symptoms above described, it will be necessary to put the child at once to bed, and to isolate him from those members of the family who have not as yet had the disease. The same general arrangements of the room are

* *Scarlatina anginosa*. This is a more serious form of the disease than when the throat is little affected.

necessary as directed for small-pox. In both instances the apartment must be kept darkened, cool, and entirely ventilated. The food must be liquid and very light, and the drink, cold sugared water, slightly flavoured with lemon, or plain cold barley-water, if the bowels are disordered. An attentive parent or nurse may give the most grateful relief to the fiery heat of the skin of the suffering child by repeatedly sponging the face and hands with *cold water*, and the whole surface may be soothed, and the child made very comfortable by bathing it with tepid water. During the heat of the eruption there need no fear be entertained as to the result of this practice, and some have even advised entire cold affusion. To this, however, I feel disposed to give a very reluctant assent, and deem it much safer, and equally acceptable to the child, to employ tepid instead of cold water for this purpose. Tepid affusion has this important advantage: it does not excite reaction, which the application of cold is apt to do, the heat becoming more intolerable than before.

When the disease attacks the throat, or when it takes on a malignant character, much attention in the due administration of remedies, and of stimulant and nourishing substances, will be necessary. A little

boy, previously afflicted with chronic hydrocephalus, to whom I was called, required the constant attention of the nurse in the removal of the viscid mucus, which filled the mouth, and flowed profusely from the nose, excoriating the skin, and threatening, but for constant care, to put an end to the little child's life by suffocation.* Sponging the mouth and nose with soft flannel, or, better still, with a piece of lint dipped in warm water, will give great comfort in such cases. It is, unfortunately, a matter of universal experience that cases of this kind in very young children are little better than hopeless from the first; and if, as in the instance mentioned, some long-standing, though little suspected malady has previously existed, the probability of life is rendered still more remote, if not, indeed, actually extinguished.

As the consequences, or, in medical language, the sequelæ, of scarlatina are often very serious, all a mother's care is required in the management of her convalescent child. While the scarf skin or *Epiderma* is peeling off, which it will be found to do in such

* In this instance the eruption had appeared, and retroceded again, and the child was rapidly becoming comatose—when it was first seen. Before death, the malignant nature of its attack was evidenced by the appearance of a livid eruption once more.

cases, and which is, indeed, necessary to complete recovery, much comfort will be derived from using a warm bath night and morning, every possible care being taken to obviate a chance of the child catching cold after it. If it was necessary to keep the patient cool at first, by this time matters will have much altered, and it is even more necessary to prevent his taking cold. This, however, is not to be accomplished by keeping him in heated rooms, but in a large room free from draughts, with an open fire and abundance of pure air. It is a good plan also to clothe the child in flannel from head to foot, and it should be worn afterwards for some months. I cannot too forcibly urge upon parents the importance of close attention to these points, not for a few days, nor a week, nor yet a month after the disease has passed by, but for several months. A child which has passed through a severe attack of scarlatina has received a severe shock, the perfect recovery of which is not usually accomplished until long after the immediate danger has subsided. Gentle exercise out of doors is desirable, when the air is genial, but not when it is cold or damp; and the diet must be at once nutritious and easily digested. Jellies, veal-tea, weak beef-tea, and, occasionally, even wine are necessary. Particular attention should be

directed to the state of the bowels, and specially also to that of the urine, and any irregularity should be at once submitted to medical care. It is a painful and disappointing truth, that many children deemed to have safely passed through an attack of scarlatina are afterwards lost by its formidable consequences. Removal, at a proper season, to a pure warm country air will be attended with good results. I would again, before passing to other subjects, caution every parent to keep a close watch over children after an attack of this disease, for neither small-pox, measles, or whooping-cough are followed by a train of such serious results as scarlatina.

The precursory symptoms of measles differ in some respects so decidedly from those of scarlatina, that it is seldom difficult to anticipate their issue. In addition to symptoms of feverishness and discomfort, the child will be seized with a profuse running at the nose and eyes. The expression of the latter is so peculiar that a practised eye can generally detect at once the nature of the oncoming attack: they are red, weak, and watery, intolerant of light, and the child is constantly rubbing them; there is also much sneezing. In about four days measles appears, and is seen first on the face, extending thence downwards.

Measles is in itself a much less alarming disease than scarlatina ; but its proper management at home is important with a view to moderate the intensity of the attack or its symptoms, and to obviate any bad consequences arising out of it. It is necessary in measles to encourage the full eruption of the rash by keeping the chamber rather warm than cool, but it should still be abundantly ventilated. The diet, and other matters of this sort, must be very simple. To relieve the thirst and irritating cough which accompany this disease, cold barley-water, to which a few jujubes have been added, will be found very acceptable and useful. If there is no disposition to diarrhoea, which not unfrequently appears, however, as this disease declines, the compound barley-water of the Pharmacopeia will be found of service, and will generally be very freely taken. It is often useful, if there is much cough of a worrying, irritable kind, to place a small blister, not larger than a shilling, just at the root of the trachea for a period of three or four hours. This, of course, will not be done unless by the direction of the medical attendant. The lungs require especial care during measles, and on its decline ; for it is found by experience that, while the fever itself is very seldom fatal, the inflammatory affections of the chest, which are apt to

come on during its course, are very frequently so. A flannel dress will be advisable for some time. If measles is not fatal, when at its intensity, its accompaniments would often appear so to be, for the mortality is on the whole greater than from the more alarming scarlatina.

The other eruptions which occasionally appear among children, such as chicken-pock, and various trifling rashes, do not require any special remark. It is, however, the part of prudence on the appearance of any rash on the body of a child to obtain proper advice as to its nature. If it is trifling, a mother's anxiety is at once dissipated; and should it be of consequence, delay with its dangers will be obviated.

Hooping-cough is more fatal even than scarlatina; yet it is popularly regarded as an ailment of very little consequence. Good service will be done to the cause of humanity if we can only convince parents and others that it is in reality a very serious and fatal disease, and annually destructive of thousands of tender children. However regarded by others, it is a disease justly considered by the physician as the most intractable in its character and formidable in its effects. If any mother who reads these pages has hitherto thought slightly of this

disease, it may be merely necessary to refer back to a previous page, on which her eye will detect the startling array of figures which represent its helpless victims year by year in the metropolis.

Let no parent trifle with whooping-cough, nor subject her children to the absurd and fallacious remedies which popular opinion alone has inflated with importance. There has no true specific for this disease been discovered, and the only right method of treating it must be that which is based upon a clear recognition of its phenomena and their causes. All empiricism in such a disease is to be justly feared and avoided. These remarks are rendered necessary by the prevalence of the opinions—1st, that whooping-cough is not a very fatal disease; and, 2nd, that there are a number of infallible remedies for it. The first of these views has been already sufficiently met; and to the second, it may be replied that universal medical experience has demonstrated the fact, that so-called "infallible remedies" always abound most for diseases of notorious intractability.

An attack of whooping-cough may be suspected if, after what seems to have been only a common cold, a peculiar metallic sounding cough is left behind, which, instead of becoming better, grows

worse as the symptoms of the cold disappear, and is particularly troublesome towards evening. The little patient often appears almost suffocated by the attack ; yet, at other times, plays about, and breathes without difficulty. The sound of the “hoop” decides the case. A more or less prolonged period of anxious care now opens upon the mother ; and while little can be said of any specific treatment for the cure of her children, every assurance may be expressed of the certain, positive, and absolute benefit derivable from a careful regulation of the domestic circumstances affecting them. The most wisely devised method of treatment may be rendered wholly nugatory and fruitless in results by a neglect of the rules to be laid down ; and, on the contrary, benefit may arise from their close pursuit, even under the disadvantages of inappropriate remedies. While I cannot admit with some that domestic attention is sufficient without medical treatment, I can safely assure those who will entirely follow out the directions given of a very generally successful result. The principal indication to be fulfilled is to maintain a constant temperature in the air of the rooms to which the child, in winter, spring, or autumn, ought be confined. If the day-nursery, and that for the night be, as they should be, on the same floor,

this will be more readily accomplished than if the one be on one storey and the other on a lower or higher. Much of the benefit of the plan recommended will be lost if, in passing from room to room, the cold air of the staircase enters the lungs. Some sacrifice of convenience ought, therefore, to be made for this purpose, and the rooms should communicate by folding doors, or in some equally direct manner. No pains should now be spared to obtain the following state of atmosphere in both these rooms :—

1st. There should be a large supply of pure air, for the constant removal of which a properly-arranged ventilator should be contrived. 2nd. The temperature of the air in every part of both apartments should not fall below 60° Fahrenheit, nor exceed 65° or 70°. 3rd. There must be no draughts, nor must the child be permitted to leave the rooms, to stand at an open door, much less at an open window.

These conditions are, perhaps, difficult of fulfilment, but they are of much importance ; and upon their accomplishment, or an approximation to it, depends in great measure the early recovery of the little patient. In summer, when the air is dry and warm, there is less need of domestic confinement ; and children of two years old and upwards may be safely sent out for gentle exercise. Infants, in whom

the danger is always greatest, are safest within doors.

The great secret of successful domestic management of hooping-cough consequently lies almost wholly in preserving the temperature of the air respired by the child at a uniform standard, and no pains should be spared to accomplish it. Proper and sufficient clothing is also very essential. The diet must be light, simple, and nutritious, and great care should be taken to look well to the state of the stomach and bowels. It is very necessary also to attend to the moral management of children attacked by this disease, since the excitement of crying will frequently bring on a violent paroxysm of the cough. Every pains should be taken to make the child happy and at ease in his temporary prison; not, indeed, by a foolish and fruitless indulgence of all its wishes, but by that kind and sweet persuasive control of which a true mother only knows the secret,—and by every playful effort to keep it amused. Before passing to other subjects, I venture again to urge upon parents the danger of trifling with this disease, and contenting themselves with trying any asserted specifics instead of at once obtaining medical aid. It cannot be too widely known that no single medicine exists which can cure this disease,

and medical men only succeed in vanquishing it by an ever-varying adaptation of their remedies to the condition of the patient and to the stage of his complaint.

In the last stage of hooping-cough, change of air is often effectual in its entire removal, after all other remedies have been exhausted. It is necessary, however, to select a fitting place and season, otherwise little benefit may be derivable from it.

The diseases of which I have now spoken are those in which proper instruction as to domestic management is of most importance, since they are specially *the* diseases of childhood. From what has been said, it will be seen how influential is a right treatment by the mother or nurse in assistance of that adopted by the medical practitioner. It is in the power of those who have the charge of children to contribute most essentially to their recovery when sick, even under otherwise unfavourable circumstances; and it is also equally in their power to frustrate the wisest plans, and render abortive the best treatment devised by medical science.

These diseases form, undoubtedly, only a very small proportion of the more serious illnesses of children, for they do not include inflammations and organic lesions of the various important organs, par-

ticularly of the brain and lungs. But it has not seemed necessary to treat specifically of these, since general rules of management are always to be obtained from the medical attendant ; and, also, since in the next and concluding chapter of this volume, such general instructions are given as are applicable to almost every really serious illness to which a child may be exposed. Had a separate consideration of parental duties, under all the varied diseases to which children may be subject, been attempted, this chapter had extended to the size of this whole work : and with only doubtful value even then ; for many children who do not escape the diseases here alluded to, not unfrequently escape all others, so that advice under such circumstances had been absolutely useless. Parents naturally look forward to whooping-cough, measles, scarlatina, &c., as a part of the history of their children ; they will, consequently, feel no disappointment at finding these and similar subjects exclusively treated of in this chapter. Such general rules of management as are adapted to almost all the wants of a sick child are sought to be given in the few remaining pages of the present work.

CHAPTER IX.

THE CHILD'S SICK CHAMBER.

THE purpose of the present chapter is to afford such assistance in the domestic management of children who are confined to their room through illness, as will be found applicable to most of the ordinary instances of disease presenting themselves in early life. It will not, however, be necessary to recapitulate the directions already given, and the attempt will be confined to the exposition of a few general principles rather than to their special application, since in preceding pages this has already been accomplished.

The nursery, as the place in which children spend a large portion of their time in early years, demands our first attention; and to render this apartment available for all the requirements of the sick-room, it has often appeared to me that medical instruction

was essentially necessary. I need not particularly describe the right appointments of a day-nursery, (for I will presuppose the existence of a separate apartment for day and night occupation,) since any large well-ventilated room, with abundance of light, and with a cheerful aspect, is adapted for this purpose. It is, however, often of much importance, and particularly, as has been observed in whooping-cough, that it should be situated, if possible, on the same storey as that for the night, and that a direct entrance from the one to the other should exist.

The night-nursery in time of illness becomes the sick-chamber of the little patients, and care should be taken that it should present all the advantages of which experience has pointed out the value in time of need. It would be improbable to suppose, that it would be within the power of every reader of these pages to arrange this apartment precisely, or in every respect, as I am about to propose; but much might be done by every one in a direction thereto. A good nursery ought to have an abundant supply of hot and cold water always at command,—day and night. It should be furnished with an open fireplace, having a register entrance to the flue, and water might be kept constantly heated

by building a small cast-iron boiler into the side of the fire, to which a constant supply might be kept up by means of a ball-cock. The ordinary grate of a kitchen which has wide hobs, an oven on one side and a boiler for water on the other, makes an excellent nursery grate, and meets the constant requirements of heating food, or of its preparation, for the invalid or young children. If such a grate is adopted, one of the improved kinds should be used, as the common kinds are both very extravagant in fuel and give out little radiant heat, which, I may here remark, is the only artificial heat that is desirable for this, or, indeed, for any apartment in a dwelling-house. But it is very necessary to have a register entrance to the flue, as frequently this is the only means of securing a proper action of the ventilator.

In the nursery should also be placed a bath, to which hot and cold supplies of water should be adapted, and from which the waste water should be capable of removal by simply raising a plug. There is no part of the appointments of a good nursery to which I attach so much value as this. The directions of medical men are so repeatedly frustrated in consequence of the inconvenience and discomfort of preparing a warm bath, that it is very important to

have at all times the facility for its use, without the hurry, bustle, and confusion constantly experienced where it does not exist. The bath is a most potent remedy in many diseases of the adult; but it is one of absolute necessity in most of those of childhood. The warm bath and a good emetic will often cut short an attack of pulmonary inflammation,—if they could only be used at an early period; and in all diseases of the skin, in all disorders of the digestive organs, in convulsions, in croup, and numerous other maladies, it is a most valued adjunct to the remedies of the medical man.

If it were possible to select an aspect for the nursery, the westerly might be the most advantageous, as at all times commanding a full light, being protected from intensity of heat, and sheltered from the penetrative influences of the cold northerly and easterly winds. The windows should be large and well fitted; they should be furnished with linen-blinds, but without curtains, except in winter. It is important to place the beds in such positions as to avoid the current of cold air, which always finds an entrance at the windows. In winter, even if every crevice were stopped, which I should be far from recommending, the air of the room on its being cooled against the window panes sinks

by its consequently increased weight, and thus produces a constant and very perceptible draught. After some of the eruptive fevers, as scarlatina, serious, and even fatal, consequences might result from the exposure of the child to such a current of air during sleep, when, as is well known, the powers of resistance to cold are greatly diminished.

The proper ventilation of this apartment is an extremely difficult task; yet, if the room be sufficiently large and lofty, and the doors and windows rightly arranged, it may be quite sufficiently effected for all purposes. But it is, in truth, of great consequence, and the health and well-being of the beloved inmates of this apartment may be most seriously compromised by neglect in this respect. If fever of a typhoid type should appear among the children, if a prolonged duration of hooping-cough should keep them in doors, or if one of them should be the early victim of pulmonary consumption—and all these are circumstances which occur among children of all classes and conditions—then the advantages of a good ventilation will be prominently perceived. The Arnott's ventilators are the only efficient means of removing the used air from the room; and if the person employed to fix them be directed to regulate the size of the opening in

the register leading from the fire into the flue, and to contract it until the ventilator is found to act, there will be little difficulty in its future management, unless, indeed, the chimney be grievously ill constructed. A small piece of perforated zinc let into the door, or a channel of air from the outside, opening near the fireplace, will give a due supply of fresh air, the equivalent of that which the ventilator removes.

It is proper that a certain standard of temperature should be maintained in both nurseries, and from 60° to 65° of Fahrenheit's thermometer will be found a pleasant and suitable degree of heat. It is of much consequence to avoid over-heating these rooms; but it is also important that they should not be too cold. All extreme fluctuations of temperature are to be avoided as far as possible; and an intelligent nurse will soon learn to accomplish this point without difficulty. In certain diseases, as already intimated, the due regulation of the temperature becomes a very important consideration.

In winter, a loose carpet should cover the floor; but should be arranged to admit of its being frequently removed, so as to allow the floor to be well cleansed, and all organic matters apt to collect upon it wholly removed. In summer, the India

matting will be the most acceptable covering. The bedsteads should be of iron or brass. There should be no curtains to a child's bed. The hideous forms which the imagination of many poor children, when out of health, conjures up enshrouded in these curtains, which then become the recesses where frightful phantoms lurk, renders it of consequence to remove any such source of disturbance. I do not here allude to the mischievous and foolish fears instilled by some thoughtless nurses into the minds of children, but to those which are the result of disease or disorder of the stomach. The pitiable condition of fright and mental anguish in which such little children awake,—trembling, shrieking, and sobbing, renders it in their case essential to make their sleeping-room as pleasant, light, and cheerful as possible, and the very opposite effect is produced by curtains. While it is very undesirable to educate a child into a fear of darkness, it is still more so to attempt its removal by harsh and cruel means, such as closing the door and leaving the poor little being to himself and to the frowning spectres with which his disorder crowds the chambers of his feeble mind. In all such cases, a small light should be burning in the apartment; and if gas be used (and it is the best source of artificial light for the nursery,

and the least liable to accident), it can be so turned down as to exhibit a spark of light often sufficient to still the terrors and dispel the horrid visions which appal the child.

The minute detail here given can possibly be carried out by only a few ; but it has appeared to me a duty to set before parents those features of arrangement in the apartments of their children of which experience has taught the importance, and also shown the very general absence. Any room can be, at a trifling expense, made into a very good nursery, if the outlay be well directed, and the alterations necessary fully understood. In the metropolis, at least, it should not be a matter of difficulty to obtain an abundant and constant supply of water, and to have a well-aired, warmed, lighted, and altogether wholesome apartment for that portion of the family with the well-being of which so much of the future happiness of the parents is inseparably intermingled. It is, perhaps, only in time of sickness, on occasions of emergency, or in prolonged disease, that the real benefit of all the instructions given will be so decided as to be fully perceptible ; but their influence is also calculated to be of constant and daily value, and to place children in the best condition as regards their physical happi-

ness. Thus regarded, it has not appeared to me that the dignity of our profession is lessened by enforcing due attention to these points.

Next to a good nursery, the sick child's chief requirement is a good nurse; and it must be here said, once for all, a mother is a child's best nurse. If, however, circumstances render it impossible for a mother to be much at the bedside of her child when sick, it is very important that some other loved and familiar face should be there. A professed nurse, unless well known by the child, is sadly out of place in the sick chamber of the little invalid. The best substitute for the mother is the person to whose care the child is always confided when in health. As such persons are often little practised in the art of nursing, there will be a necessity for careful instruction and supervision; but her influence with the child in the absence of its mother is absolutely required; and if she be informed how to use it, and to preserve a cheerful, hopeful, and sympathizing spirit, it will be of the greatest value in the hour of need. Little things which a child would not consent to do for a stranger, or one little known to it, it will be easily persuaded to by the mother or her substitute; and when often the nauseous medicine would have been dashed from

any other hand, it will be gently and quietly taken if administered by theirs.

- . A word may be here said upon the subject suggested by the last sentence—the right administration of medicine to a child. With young children it is necessary to give doses very frequently repeated, such as every hour and a half or two hours, or even oftener, according to the urgency of the case. Much of the success of medical treatment really depends upon attention to this point; for it has been well remarked by a late physician of eminence,* that unless the next dose of medicine is given before the effect produced by the first is altogether effaced, no real progress is made, for the cure is always commencing, but never proceeding. It is, therefore, necessary to pay a very careful attention to the intervals mentioned by the medical man between the doses of medicine. It is also very important to attend to the *manner* of their administration. Effervescing saline medicine has been known to be taken, the liquid first and the acid afterwards, so that the mixture took place in the stomach not in the glass! Such a mistake might be extremely serious in a child, for the enormous

* Dr. A. T. Thomson.

disengagement of gas resulting might fatally interrupt its respiration, or do other mischief. Again, insoluble powders are often ordered for children, more frequently indeed than for adults; but they are very repeatedly given in water, and falling to the bottom are never received by the child at all. All powders should be given, unless otherwise directed, in a little honey, or sugar and water, in a spoon, and the child should be required to take every portion of them, otherwise the most active ingredient may actually be left behind.

When medicine is given, it should be plainly told the child, if of a fit age, that it is medicine, not mere sugar or preserve. A most sad system of untruth-telling characterises the training of many children, and especially when they are sick. A child is, generally, at a very early age capable of understanding the propriety of the connection between its sufferings and their means of relief. It is perfectly natural to it to perceive the fitness of what may be even a nauseous remedy to its aching body: not so with sugar and such like; for these are partaken of in health. In short, the untruth is, after the first, always detected; and the child has a just cause of complaint against those who thus tend its bed of sickness. But the same considerations

render it not generally difficult to give to children, from two or three years of age upwards, even the most disagreeable medicines, if the right plan be adopted. Let a child be thus addressed: "You are very thirsty and hot, and we are all grieved to see you so ill, and hope you will soon be better. But, you know, you cannot get better unless you take the medicine in this glass; it does not taste nice, but it will do you good, and I wish you to take it at once. You know I love you, and would not harm you for the world,"—and I have little doubt of the result. But, let a child be deceived, or for every dose of physic promised some new reward, and the greatest difficulties will arise. If I address a mother who has taught her child when in health, that out of love to him she enforces his obedience, and who has thus led him to respect, confide in, believe, and love her, she will pardon this imperfect sketch of a moral lesson in the sick chamber; and if another, long used to indulge and yield all to her children,—she, perhaps, will not read this page without profit.

Vigilance, so necessary in every sick room, is doubly needful in that of a child; and this extends not merely to domestic, but also to medical attention. When a child is extremely ill, it is not

enough to see it once, or even twice, daily. There are crises in their diseases when a medical man's presence is of importance, as often as his other engagements will really admit, to the extent of four or five visits daily. So large a demand upon his time it may not be always within his power to meet, but whenever possible it should be given; for all who have devoted much thought to the treatment of disease in children, regard this frequent visitation of the attendant as indispensable to success, and many medical men are fully convinced of its importance, yet are deterred from fully carrying out their wishes through a desire not to excite the alarm of the friends, or not to add to the unavoidable expenses attending the illness. If parents equally felt its importance, these difficulties would be greatly diminished, and with that view the subject is here adverted to. No kind of restriction should be imposed upon his attendance under such circumstances; and instead of regarding his repeated visits as presages of evil to the beloved sufferer, they should be rather considered as affording an additional security to its restoration and recovery. It has often appeared to me, that the children of the poor who are attended from dispensaries are frequently better circumstanced as

regarded medical aid than those of wealthier persons; for no limit exists in their case to the remedial means which may be brought to bear upon their diseases. Whatever the medical man deems useful, or even likely to prove so, he directs without hesitation, and he is under no fear that his oft-repeated visits will excite any other feelings than those of gratitude and respect.

Not unfrequently the anxieties of parents lead to the very opposite extreme, and the most unreasonable demands are made upon the valuable hours of the medical attendant. It may be useful, therefore, to mention that, as a general rule even in extreme illness, the mere presence of the attendant can be of little avail at shorter periods than two or three hours, and that then the investigation of a few minutes is generally sufficient to determine, or to direct, the continuance of treatment.

Very frequently, children, who when sick are generally very fretful and impatient, are excited to great alarm by the visit of the doctor, and the name becomes, through the thoughtlessness of the nurse, a name of terror and dismay to the poor child. The tumult thus raised often interferes most essentially with the necessary inquiries into the nature of the ailment; and unless the medical man

be possessed of some tact in the management of children, he may be compelled to retire very little enlightened as to its real condition. With younger children, it is a good plan to approach the bed as nearly as possible, without taking any notice of its troubled occupant, until the fear excited by the visit somewhat subsides, during which the mother or the nurse, or one of the elder children may be conversed with. By and by, on a little advance being made, the child will yield reluctantly its position of fear or defiance, and, in a few minutes, the doctor and his patient will become good friends. This is of the greatest importance, for it will be next to impossible to learn the true features of many serious diseases in children without their consent and approval. If the attendant has children of his own, he will not be long in finding a way to his little patient's heart and confidence; and the influence he may thus gain over the child will often thereafter appear. On repeated occasions, the gentle, kind, and quiet demeanour of the doctor will still the child's troubles, and medicines and food will be received from him when no amount of persuasion from others would be of any avail. Of all mischievous bugbears of the nursery, there is none more so than that which makes the name of the

medical attendant the terror of the children, who should rather be encouraged to regard him as their help and friend.

The diet of children, when ill, should be entirely under the direction and control of the medical attendant, otherwise serious, and even fatal errors may be committed. I have repeatedly had the disappointment of finding that, while an antiphlogistic course of treatment was indicated and pursued, the thoughtlessness of the attendants in matters of diet has encouraged the flame which the medicines were designed to extinguish. To give a child stimulating food, such as strong beef-tea, eggs, meat, and such like, with a burning skin, a feverish tongue, and throbbing pulse, while the medicine was a cooling saline or depressant, is as though one cast oil and another water on a fire of live coals; yet, probably, few medical men are without their records of such instances of perverse management.

Almost all the serious illnesses of children are divisible into four stages or periods, in each of which the diet must be appropriately arranged. There is, first, the stage of excitement, in which there is slight fever and general indisposition; to this succeeds the period of activity, or full development of the disease; in a shorter or longer time

comes the period of declining intensity; and to this follows the fourth stage, which may be regarded as convalescence. To transpose the medical treatment of either of these stages, or, in other words, to give tonics when the child was in the second or inflammatory period, would be justly deemed an outrage upon medical science: yet the same thing is repeatedly done in regard of diet; and such articles of food as I have above mentioned, are as violently opposed to the requirements of the child at that period as would be the most powerful tonics of the Pharmacopeia.

In all these four periods, the child's diet is capable of a nice adjustment to the peculiar features presented by each.* In the first or preliminary stage, it should be immediately lowered; that is to say, if a child previously well becomes hot, thirsty, and perhaps vomits, or complains of head-ache, it would be very injudicious to permit the continuance of its usual meals: a reduction must be made in quantity, but still more importantly in quality. A child with these symptoms cannot digest animal food, or even broths, and pieces of food will be repeatedly found vomited, some hours after having been eaten, still unchanged. Nature thus plainly indicates the entire

* See the Appendix, on the Diet of Sick Children.

unsuitability of such diet at such a period ; and, in fact, the child generally loathes food to such a degree that it is with difficulty persuaded to partake of it. How often, at such times, is it even tempted to eat by presenting to it dainties, not in any state of health of a desirable character ! If bread and milk form the child's usual breakfast, it may be advisable to substitute very weak tea or cocoa, with a little dry toast. For dinner, instead of meat and vegetables, a light pudding of arrowroot or sago will be necessary, and for tea the same as for breakfast. If thirst is felt, cold barley-water, slightly sweetened, is the safest medium for its relief.

In the second or inflammatory stage of disease, the diet must be still more reduced ; and it will now often be necessary to interrupt all regular meals, confining attention merely to supplying such diluents as may be required by the peculiar nature of the complaint. A small cupful of arrowroot, made chiefly with water, or a little sago, should be the strongest food permitted, and very generally even this will not be desired by the child. I may here remark that, as a general rule, if the management of children while in health has been judicious and natural, it will be safe to follow the dictates of their feelings when ill ; for the wise and beautiful adapta-

tion of demand being proportionate to the wants of the body influences them even more than in adults. Sometimes, however, very improper food is desired by children when sick ; but it deserves attention that this is often in those cases where no restraint has been exercised on the quality of their repasts while in health. At this period, the desire for drink is often very pressing and urgent ; and unless medical direction opposes it, the little patient may generally be pretty freely permitted to relieve the thirst which consumes him. Toast-water, barley-water, plain water slightly sweetened, or barely coloured by a little tea or cocoa, will be thankfully accepted by most children. If acidulous drinks are used, and they are sometimes not only harmless but even serviceable, it should always be done after due medical sanction ; for, in some inflammatory states, they may be very improper. Of these are, tamarind-water, made by pouring boiling-water over a few tamarinds in a proper vessel ; black-currant water, made in the same way, by using a little preserve, with a slice of lemon ; apple-water, prepared by putting a few slices of a ripe and sweet apple into hot-water, and sweetening it—when cool, it is fit for use ; lemon-water, made of a slice or two of lemon with sugar and water ; what is called Imperial,

which is lemon-water with the addition of a little cream of tartar. If any of these drinks are used, they must be very weak, otherwise they will be improper. Perhaps the most agreeable beverage to older children is cool aerated water, to which a few drops of some syrup, or a little raspberry vinegar, are added. This can always be obtained either in bottles or in the ingenious instrument called a syphon vase, which is always charged, and from which any quantity can be drawn without loss of gas from the rest.*

Parents and nurses are often extremely anxious to do something, as it is popularly expressed, "to keep up the child's strength," particularly when several days have passed without its receiving any regular food. But if active inflammation, or a high state of fever, is still present, these attempts will not only be fruitless, but may really prove a source of irritation and debility rather than of strength. Un-

* At the Hospital for Sick Children, they have a very excellent drink called "acidulated rice drink," made of ground rice, water, barley sugar, and lemon juice. I cannot but avail myself of this opportunity to express my deep interest in this admirable charity, and my sincere desire to see it established on the broadest basis of public usefulness. If we would have healthy men and women, we must first learn how to treat them when as yet in childhood,—and this institution will ultimately come to present that as its most prominent feature of public benefit.

less, therefore, by the direct authority of the medical man, no other than the lightest and blandest milk diet is permissible throughout this period, and it is very generally necessary to dilute the milk with an equivalent quantity of water.

In the third stage, the disease having nearly spent its force upon the body of the suffering child, or having yielded to the remedies administered, it becomes necessary to resume a more nutritious scale. Very weak broths may now be permitted, and much refreshment will be derived from partaking of a little jelly, which for young children may be warmed, but for older ones may be cold. Great discretion is now requisite to avoid rekindling the expiring embers of the fever. And the quantity, strength, and frequency of the administration of this, or any other kind of food, must be in strict agreement with the injunctions laid down. As the third stage passes into the fourth, the diet should become increasingly nutritious, and, occasionally, even a little wine may be added to some suitable portion of the food.

The fourth stage is one of debility. The thirst, fever, burning heat, and delirious wanderings have all subsided, and nature is once more regaining healthy possession of the now emaciated body. The great principle to be observed as to diet now, is not

to attempt too much. Just as the rest of the body is weakened, so are the digestive organs ; and if they are required to perform too much, there may be a slight relapse to heat and fever again. For young children, milk may be often given now, and a little jelly added to it. Veal-tea is also very suitable, and beef-tea may also be occasionally given. Bread will now be added freely to the food. It is very essential to give food "a little and often" at this period, as a sense of exhaustion and want supervenes soon after a meal. In cases of great debility, it is necessary to give food every half-hour or hour, and to add, it may be, wine to it, or even a few drops of pure brandy ; but all such cases will be under medical control, and must be accordingly managed. When gentle exercise can be taken, the diet may resume its ordinary characters, if no other cause indicate the contrary.

When the little patient is at the breast, it is often somewhat perplexing to a mother to know how rightly to manage her child if seized by fever or inflammation. It is manifestly as improper to permit full diet to an infant in such circumstances as to an older child ; yet it may be extremely thirsty, and its thirst must be appeased, or it will not be pacified. The child must not be allowed the breast

as often as in health, perhaps not at all in some cases for a day or two; but it may suck sweetened barley-water from a bottle, which will allay its thirst, and often remain on the stomach when the breastmilk would be almost immediately vomited. It must, however, be remembered, that an infant will not bear much privation of food, and prudence will suggest the necessity for counsel on such a point. During its recovery, a little good veal-tea, or asses' milk, with a little isinglass dissolved in it, will assist the nourishment supplied by the mother. In convalescence, exercise in the open air, and great care of her own health on the part of the parent are all the means necessary to its perfect restoration to health.*

The moral management of children during their confinement to the sick chamber, might seem scarcely within the province of a medical writer; yet, since it may assume a serious aspect in regard to their prospects of speedy and safe recovery, a few hints may not prove unacceptable nor out of place in this chapter. If the moral education of a child while in health is carried out on right principles, these principles are not to be compromised by the mere advent of an attack of sickness;—but their practical working

* The Appendix may be referred to for general instructions on the adaptation of the diet to the disease.

requires to be somewhat modified. Sickness should not be a plea for foolish indulgences, or for the permission of any act of disobedience or contumacy on the part of the poor little sufferer, except of course on the occurrence of delirium, who, it must be remarked, is often prone to misinterpret the kindness and sympathy then actively shown to him into a relaxation of certain fundamental laws, of which, at other times, he was well aware of the existence and force. Yet, by every little device short of an actual compromise of such principles, the child should be amused, its attention diverted, and a loving obedience courted. As soon as possible, all causes of irritation should be removed; and it must be never forgotten, that very trifling things become sore troubles to the fretful mind of the invalid, who should be soothed and gently expostulated with, not harshly chid or roughly addressed, when such a spirit manifests itself. Firmness and gentleness, combined with affection and playful sympathy, on the part of the parent and attendants will be much needed in the child's sick room; and if to these are united a prayerful and heaven-directed spirit, the season of sickness may be as much a blessing to the child as it often, undoubtedly, proves to the Christian parent. The presence of strangers, or

of noisy playfellows, in the room, is particularly objectionable; for the temporary revival and excitement during the presence of a companion are often succeeded by a relapse into a worse state than before.

Occasionally it will occur, that fever of a low or typhoid character seizes upon one of the inmates of a nursery, and it may be useful to state a few general rules for such cases. The great risk then incurred is that of communication of the disease to other children, and intercourse with them must be rigidly forbidden. At such times, fresh air is of great importance to the child's recovery, and all curtains should be removed, the atmosphere of the apartment being kept in as cool a state as possible. All evacuator matters are to be instantly removed in a covered vessel, and it were well that such vessels should always contain a small portion of some disinfecting fluid; not that I attach much importance to the alleged virtues of such fluids, but it is, undoubtedly, salutary as quickly as possible to deodorize the air of the sick chamber. Frequently, the window may be thrown open with safety, and even advantage, and the little patient may inhale the fresh air as it steals into his room. There can be no great objection to the use of pastiles; but a little aromatic vinegar, or Eau de Cologne, sprinkled about the

room, gives a more agreeable and fresh feeling to the air. A fire should generally be kept burning, as it is an excellent ventilating agency, and its radiant heat, if in summer, can be caught by surrounding it with a thick blanket or quilt. The room, in all such cases, should be as light, airy, and cheerful as it is possible to make it; and the conduct of the attendants should be such as to raise the hopes and soothe the troubles of the little invalid: if, indeed, delirium, as is too often the case with older children, and convulsions with younger, do not render us mute but watchful ministers at the bedside.

In such cases, the repeated administration of wine, or occasionally of hot mustard baths, is essential, and a good nurse is now needed. Since the child is generally indifferent to those who surround it, an older person than its ordinary attendant will be found very valuable at this important and critical juncture; and it is most desirable to secure the services of a mother, and particularly of a bright and hopeful Christian. A truly good nurse is, however, more often desired than obtained. Neither the mother of the child nor the nurse should, in such a disease, hang over it, or needlessly expose themselves to the influence of the infectious atmosphere enveloping the poor child's person. I have

always attached importance to the removal of the dark and offensive matter—called by medical men, *sordes*, which collects about the teeth and lips, and on the tongue, in low fevers. As every breath inhaled passes through these parts, it carries some of the organic offensiveness into the lungs, and, poisoning the respirations, thus perpetuates the disease. It is, therefore, always a rule with me to direct their gentle but frequent removal. By bathing the lips and teeth with an acidulated gargle,* and gently wiping them afterwards with a sponge or soft handkerchief, the *sordes* may generally be removed. But they accumulate again, in bad cases, with such rapidity that constant watchfulness is necessary.

A frequent change of linen is very necessary when a child is sick; and unless the patient is very much exhausted, a change also of the bed is very useful. One bed should be kept for use by day, and the other by night. The best material for a child to lie on is a well-stuffed horse-hair mattress. If, through long disease, the skin has begun to suffer on exposed parts, the adaptation of small pillows to them, or the substitution of the hydrostatic bed, will be found very useful. It will also be useful to

* There can be none better than the chlorine gargle, made with chlorate of potash and hydrochloric acid.

bathe the reddened patches of skin with equal parts of water and Eau de Cologne.

Generally speaking, I have found little difficulty in administering medicine to children when sick; but if it be obstinately refused after much kind expostulation has been tried, there is then no alternative, and the child must be held while it is administered. An ordinary spoon is the best means, and if it is placed sufficiently far in the mouth, on the back of the tongue, the child cannot spit out its contents. This, however, must be done gently, firmly, and quickly. Many children, finding it of no avail to resist, will, after one or two trials, yield the point, and there is no further difficulty on this subject. If enemata are to be administered to very young children, it is necessary to proceed with much carefulness, and particularly when the lower portion of the intestine is already in an irritated, or even inflammatory, condition. The use of an ordinary apparatus is often impracticable in their case, and an injection may be very safely and speedily given by employing an India-rubber bottle and small pipe.

In a preceding chapter I have directed attention to the importance of an intelligent domestic observance of a child's symptoms when ill. Many circumstances render it difficult for a medical man to seize

the whole features of the child's case during his visit, and he may gather up very useful and valuable portions of its history from the simple and untechnical relations of the mother or nurse. It is a careless and dangerous habit for a medical man to acquire—that of a universal contempt of all but the prescribed methods of acquiring knowledge of disease. The mother or nurse should consider it a part of their duty to notice every alteration or fresh feature which the disease may assume during his absence, and should inform him of it. Frequently much depends on the right exercise of this habit of observation ; for it is often upon the occurrence of particular symptoms that medicine is to be given, or wine more freely supplied or withheld. Even in extreme danger a mother should not permit her grief to drown her prudence, or her fears to paralyse her efforts, in this, as in every other direction, for the good of her child.

When leeches are to be applied, if it is impossible for that to be accomplished by the medical attendant (and in young children it is very desirable that it should be intrusted to no other person), then great care of the after bleeding is necessary. On more than one occasion have I seen almost fatal results from the application of a single leech, the subse-

quent bleeding having been permitted to continue unchecked. Firm and long-continued pressure with the point of the finger on the bleeding orifice is the best and simplest means of subduing it, and will be certainly successful if patiently persevered in; but if the bleeding still continues, pressure must be kept up until the arrival of the medical man. By heating the blunt end of a needle red-hot in the flame of a taper, and touching the bleeding point with it, I have arrested very alarming hæmorrhage of this kind in young infants; but there are numerous other resources.

Cold is a therapeutic agent of great value in many diseases of children; but it is one which, of all others, is the most mismanaged at home. When cold is applied to the head, the ordinary plan is to put on a layer or two of linen dipped in vinegar and water; and this is not unfrequently left there until it is quite dry. The only proper method of applying cold to a child's head is by, what I will call, a dry method. If water is directly applied at all, it should be by gently washing the face or hands with a sponge dipped into very cold water, and they should be dried with a linen towel afterwards,—or if it is during a convulsion, by sprinkling the face. What is called by medical men the ice cap, which consists

of two bladders partly filled with water and ice, on one of which the head is placed, while the other is placed upon the head, is a simple, clean, dry, and very efficacious method of using cold. A still more useful plan is the following, when it can be judiciously managed: a large vessel of cold water, into which some thick lumps of ice are placed, should be arranged at some height above the child's head, and a gutta-percha tube bent into the form of a syphon, the short leg being near the bottom of the vessel, the long one, hanging over its side, should be tied to it. To the end of this tube a bladder should be fastened, from the open extremity of which a short length of tube should project, so as to carry away the waste water into some suitably disposed vessel under the bed. On drawing the air out of this simple apparatus with the mouth, the water will descend the long leg of the syphon, enter the bladder placed upon the child's head, and trickle away as fast as it becomes robbed of its heat through the lower tube. By partly filling the mouth of the latter with a small piece of cork, the flow of water may be regulated with the greatest nicety, and thus the rapidity with which the heat is carried away may also be easily governed, since a rapid flow will carry away much more heat than a more gentle and

gradual one. I can safely recommend this arrangement as being at once simple and efficacious, and well repaying the trifling inconvenience of its first arrangement.

It is important, however, to caution parents and nurses against a too vigorous application of cold, unless so directed by medical authority. So powerful a means as I have just described is quite unfit for ordinary cases, and should be reserved for those in which the direction of the medical man is explicit as to the advisability of the application of cold.

When children have been long inmates of the sick chamber, as in cases of spinal disease, or disease of other bones, or consumption, every effort should be made to render them happy during the weary hours and long days of their confinement. They should be placed as near the window as possible, where light and air can come to them. They should not be left alone more than can be avoided, and younger children not at all. A few toys to a younger, and a canary and a few pots of flowers, are often a solace to an older child, and a camera obscura, or a reflecting mirror, present a never-tiring source of interest and amusement. Whatever exercise medical authority may prescribe should be most carefully attended to. In short, I must

leave it to the thoughtful and affectionate parent of such a little sufferer to devise those means of whiling away its hours of imprisonment which her own tact and womanly ingenuity can far better supply than I pretend to describe.

I know not a more painful spectacle than that presented by a dying child. The glassy upturned eyes, the catching and hurried respirations, the pale face and quivering lip, the clammy surface and drooping chin, speak too plainly, even to the commonest observer, that medical skill and maternal and domestic attention cannot stay the spirit when the messenger of death summons it away. In a little time, that suffering and diseased frame will become dust, and its immortal tenant will have entered on its bodiless state. And if such be the result,—often ardently desired, and even prayed for, in some of the dreadful and distorting maladies to which children are subject,—it is a sweet consolation, even in the bitter pangs of separation, to the believing parent, who has often laid her child at Jesus' feet when in health and strength, to have an assured hope that the blood of the same Mighty Redeemer has “answered for its guilt,” and that its spirit has entered there where sickness, pain, and death can never follow. That such is the glorious termination

to the sufferings of thousands of young children, I, for myself, can entertain no doubt ; nor would I willingly lend an ear to those who would rob a parent of so strong a solace in a time of the bitterest affliction. For, while repentance and faith in Christ are necessary to salvation for those of riper years, the opinion of many wise and good of all ages concerning young children has been uniformly expressive of the confident and assured belief that such children, dying before they commit actual sin, are saved through the merits of the Redeemer.

Hope of recovery may, however, be cherished almost to the last. How many children that have been given up by the attendants and friends yet recover, and ultimately grow up to maturity ! While life exists, even in the most desperate cases, a lingering ray of hope may yet be allowed to steal into the sick chamber of the child ; and it is on this account necessary not to relax in administering remedies until it is absolutely forbidden by the medical man, or rendered impossible by the failure of the power of deglutition. This must, however, be done gently and with much care. In extreme exhaustion, a feather dipped in wine, or in a little brandy and water, may now and then be used to moisten the speechless tongue.

That, from the earliest even to the latest hour of the life of a child, this book should be useful and practical, has been the design of its writer; and that object he would fain hope to be now accomplished, for he has conducted the reader from the rejoicing period of its birth to the solemn hour when the spirit of the child is about to be summoned to the presence of "God who gave it."

APPENDIX ON THE DIET OF CHILDREN WHEN SICK.

THE medical man is so constantly asked to give directions as to his young patient's diet, and the diet of children is so much less attended to than that of adults, that I have been induced to arrange a few leading features of this part of their domestic treatment in the form of the annexed Table. As I have not been able to meet with any published Diet Tables for Children applicable alike to the periods of Infancy and Childhood, this Table is less elaborate than it might otherwise have been. Still I believe it to offer a sufficient general guide to parents in the dietetic management of their children when sick. Since the quantities to be given vary with the age of the child, I have contented myself with merely indicating the nature and quality of the food advisable. No parent will venture on No. 4 diet without sanction from the medical attendant.

For Infants from three Months to one Year.

No. 1.—LOW DIET.	No. 2.—MEDIUM.	No. 3.—FULL.	No. 4.—EXTRA.
Suckling four times in twenty-four hours, with moderation in quantity. Milk and Water—of Milk, one-third; Water, two-thirds, with Sugar. Barley Water when thirsty. If not suckled, Asses' Milk sparingly.	Suckling every four hours during the day. Weak Veal Tea, or Jelly Water, made of Water one pint, Gelatine or Isinglass, half oz. and Sugar: to be given warm occasionally. Milk and Water, of Milk, one half; Water, one-half; with Sugar; occasionally when thirsty. Asses' milk.	Suckling every two, three, or four hours, according to age and debility, and in the night if necessary. Veal Tea; good. Beef Tea, free from fat. Chicken Broth, good Jelly, in solution. Asses' milk freely. Mutton Broth, plain.	Often repeated portions of Beef or Veal Tea, with wine, and other stimulants.

For Children after one Year generally.

	No. 1.—LOW DIET.	No. 2.—MEDIUM.	No. 3.—FULL.	No. 4.—EXTRA.
BREAKFAST	Milk and Water, one-third Milk. Small portions of Bread, as Dry Toast, &c. Gruel. Very Weak Tea or Cocoa, with one-third Milk.	Milk and Water, half Milk. Weak Tea or Cocoa. Bread, &c., as No. 1, but in greater quantity. Bread and Butter, one or two pieces. A Riscuit between Breakfast & Dinner.	As No. 2, without restriction as to quantity. An Egg (new laid), or a portion of one, and very lightly boiled. A cup of Beef or Veal Tea between Breakfast and Dinner, with a rusk.	As above.
DINNER	Arrowroot. Sago. Panada. Tapioca. Rice. Mashed Potatoes, with Milk.	White Fish. Boiled Chicken. Light farinaceous Puddings, with a portion of an Egg in them. Bread Pudding. Rice Pudding. Jelly. Mutton Broth. Veal Broth.	Roast Mutton. Boiled Mutton. Roast Fowl. Roast Game. Roast Beef. Puddings, as No. 2. Beef and Veal Tea. Jellies. Mashed Potatoes.	
TEA	As at Breakfast.	As at Breakfast.	As at Breakfast.	

DRINKS: *Plain*—Very Weak Tea; Toast Water; Cold water, sweetened. *Mucilaginous*—Barley Water; Gum Water; Linseed Tea; Rice Water. *Acidulous*—Black Currant Water; Tamarind Water; Lemonade, &c.

Through the courtesy of the physicians of the Hospital for Sick Children in London, I have the satisfaction of being able to add the Diet Table of that valuable Institution.

DIET TABLE of the HOSPITAL for Sick CHILDREN.

	SIMPLE DIET.	PUDDING DIET.	BORN DIET.	MEAT DIET.
BREAKFAST, at 8 o'clock.	Bread, three oz. Sweetened Water, one-sixth pint. Do. with Milk, quarter pint.	Bread, four oz. Milk, half pint.	Bread, four oz., with Butter. Cocon, one-third pint, or Bread and Milk.	Bread, four oz., with Butter. Cocon, one-third pint, or Bread and Milk.
DINNER, at 12 o'clock.	or, Bread, one oz. Gruel, half pint. Thin Arrowroot, half pint.	Rice Pudding, Bread Pudding, or Sweet Pudding. Milk and Water, quarter pint.	Bread, two oz. Mutton Broth, with Vegetables, half pint. Mashed Potatoes, four oz.	Roast Mutton, three oz. (when cooked). Mutton Broth (strained), half pint. Mashed Potatoes, six oz.
TEA, at 4 o'clock	Acidulated Barley-water, or Rice Drink, or White Decoction, as drinks.	Bread, four oz., with Butter. Milk and Water, one-third pint.	Bread, four oz., with Butter. Milk and Water, one-third pint.	Bread, four oz., with Butter. Milk and Water, one-third pint.
SUPPER, at 6 o'clock.		Thin Arrowroot, one-third pint.	Gruel, one-third pint.	Gruel, one-third pint.

Children under Eight Years old to have a third less.

Extras, as Mutton Chop, Fish, Eggs, Beef Tea, &c., may be ordered, as may Wine, Beer, or Spirits, for any of the Patients for whom the Medical Officers think fit to prescribe them.

Receipts for the above Diet Table.

Cocon.—Cocon ribs half oz., water one pint; boil to half pint. Add half pint of milk, half oz. sugar, and little powdered ginger, if liked, mixed with water, and boiled for two hours.
 Gruel.—Bread, four oz., water one pint, sugar half oz.—*Milk and Water*.—Milk two-thirds pint, water one-third pint, sugar quarter oz.
 Arrowroot.—Arrowroot half oz., water three-quarters pint, milk quarter pint, sugar half oz.—*Thin Arrowroot for drink*.—Made with quarter oz. of arrowroot.
 Rice Pudding.—Carolina rice half oz., sugar half oz., milk half pint.
 Bread Pudding.—Either boiled or baked; half breakfast-cup or two oz. of bread crumbs, one egg, half pint of milk, half oz. of sugar.
 Mutton Broth.—Half lb. meat, one oz. carrot, one oz. turnip, half oz. barley, one and a half pint of water to make one and a quarter pint of broth. Served with the meat in it.

Suet Pudding.—Half lb. suet, half lb. bread-crumbs, with little salt and little powdered ginger, if liked, mixed with water, and boiled for two hours.
 Mashed Potatoes.—Mashed without butter, with milk only. The meat for mutton broth.—Neck of mutton. For meat diet.—Mutton, legs and shoulders, only.
 Acidulated Rice Drink.—One oz. ground-rice, two quarts water; boil and strain. Sweeten with barley-sugar, one oz.; acidulate with one oz. lemon juice.
 Acidulated Barley water.—Barley-water three pints, two lemons sliced; boil to a quart; sweeten with two oz. loaf-sugar.
 White Decoction.—One oz. bread-crumbs, half oz. barlebaron shavings, three oz. water; boil to two; flavour with lemon-pest; sweeten with 1 oz. sugar.

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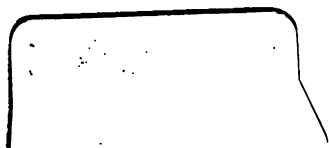
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